Presidential Address

ON

THE PUBLIC HEALTH OF DUBLIN.

Delivered at the Congress of Public Health, held under the auspices of the Royal Institute of Public Health, at Dublin, August 18th to 23rd,

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MY LORDS, LADIES, AND GENTLEMEN,—My first duty on this occasion is to express my warmest thanks to the Royal Institute of Public Health for the honour which they have conferred upon me in selecting me to preside at this important Hygienic Congress. It is by no means the only compliment which the Institute have paid me, for I gratefully bear in mind that four years in succession they unanimously elected me to be their President. I esteem this action of the Institute all the more from the circumstance that their headquarters are situated in London whilst I am a resident in Dublin. In the six millions of people in that vast city no difficulty would have been experienced in securing for the presidency of the Institute men of the highest repute in the domain of science. I rejoice to know that under the leadership of my distinguished successors, Sir Henry Littlejohn and Professor Smith, the career of the Institute has been one of uninterrupted success and that at this moment it occupies a high position amongst the many useful organisations in these countries which are supported by voluntary efforts and are without State aid.

My next duty is the pleasant one of welcoming most warmly, on behalf of the Reception Committee of the Congress—and I may, indeed, say on the part of the citizens of Dublin—the visitors who have come to this city from England, Scotland, Wales, and the Irish provinces to take a part in the proceedings of this Congress. Amongst them are the bearers of names known and respected in many lands. They have done noble work in devising and carrying into effect measures for the mitigation of human suffering in disease, for the prolongation of life, and for the amelioration of the conditions under which the lower and more dependent classes of the population exist. In our forthcoming conferences their voices will be heard earnestly and eloquently advocating the adoption of every means by which the moral and physical improvement of our race might be promoted. I use the word moral advisedly, for assuredly the strict observance of the laws of physical health cannot fail to exercise a beneficial effect upon our morals. Truly has it been said that cleanliness is next to godliness, and we cannot forget that the first code of sanitary laws came to us from a Divine source. The lessening of overcrowding in the tenement houses, the better care of the children of the poor, the multiplication of open spaces and recreation grounds, the provision of means of innocent amusements, cheap baths and washhouses, healthful dwellings at moderate rents, are all agents for improving the *morale* and *physique* of the people.

HIGH DEATH-RATES IN TOWNS.

The aggregation of a large number of people upon a limited area operates injuriously upon their health and lessens the mean duration of their lives. Many years ago Dr.—now Sir William—Gairdner of Glasgow pointed out that whilst the death-rate in England was 15 per 1000 persons living on every square mile it rose as the density of population increased until it became 27 and upwards when the population came to be 2900 per square mile. The death-rates in purely rural districts have not been very largely reduced since the beginning of the present century; in the towns the case has been different. Before the system of national registration of deaths was adopted there existed the means of closely approximating the death-rates in towns. From the "Bills of Mortality" of London we learn that the death-rate in that city during the period 1728 to 1780 was about 50 per 1000 persons living. The deaths therefore greatly exceeded the births, and were it not for the great immigration into the city from the country its population would have become extinct, as the mean age at death of the citizens was only 20 years. According to Sir William Petty, the deaths in London in six years of the seventeenth century exceeded the births by about five-eighths. He showed that at the same period the same relative proportions between births and deaths existed in Dublin.

For centuries the urban death-rates greatly exceeded the rural rates, in many cases by from 20 to 50 per cent.; but during the last 40 years they have been approximating, although a gap far too wide still divides them. In 1896 the estimated population of England and Wales amounted to 30,717,355, of whom 14,883,806 resided in 110 town-districts, each containing more than 35,000 inhabitants, and 15,833,549 in country districts and towns and villages having a smaller population than 35,000. The death-rate in the urban districts was 18 and in the rural districts 15·3 per 1000, the difference being 2·7 per 1000. The mean rates in the previous 10 years were 19·7 and 17·2, a difference of 2·5. Let us compare these figures with the statistics of the decade ended in 1860; in that period the urban rate was 24·7 and the rural 19·9, the difference being 4·8. Gratifying as it is to find the gulf between the urban and country death-rates narrowing, it is unsatisfactory to observe that the rate of mortality should be so much greater in some towns than in others. In 1897 the rate in Eastbourne was 8·2, in Bournemouth 10·1, in Croydon 13·62, and even in the manufacturing town of Darlington 15, whilst in Liverpool it was 26·76 and in Salford 26·88. Brighton, a most fashionable town with a well-to-do population, had a death-rate of 15·23; but Wakefield, Stockton-on-Tees, and Jarrow—all manufacturing towns—had almost the same rate.

CAUSES OF THE HIGH URBAN DEATH-RATES.

The causes which raise the urban death-rates so much above the rural ones are numerous and perhaps not fully discovered. The causes of the enormous difference between the bills of mortality of the healthiest and least healthy of the towns have not been fully investigated. The contagion of the fevers must clearly be more readily conveyed from the sick to the sound in towns owing to the closer contact of the people. The town atmosphere is less pure than the air of the country; its soils are generally contaminated with filth. In its narrow streets and courts the direct sunlight—so necessary to maintain the purity of the air—and thorough ventilation are wanting. The effete matter from dwellings and workshops and the sweepings of the streets are sometimes allowed to accumulate and to pollute the air by their noisome exhalations. Many of the occupations of townspeople are of a more or less unhealthy nature and the majority of them are sedentary. The out-door life of the farmer and agricultural labourer is obviously more healthy than that of the town bakers, shoemakers, tailors, mill-workers, &c. The cabin of the peasant may be, and indeed too often is, a wretched dwelling, but it is at least surrounded by the pure and open atmosphere. In the towns a dozen families often occupy as many rooms in the same house, whilst hundreds of similar houses invest it on all sides. In the narrow back street and close court we see the children of the poor with bleared eyes, colourless lips, and pallid faces, pining for fresh air and a view of the wide canopy of the sky. How different is not the lot of the country child and young person. They see the hills resplendent with the sheen of the golden gorse, they inspire air fragrant with the perfume of the hawthorn and of many a sweetly odorous flower, they roam over fields of emerald green, through shady woods and by purling brooks and silver rivers, whilst the air is filled with the melody of the feathered warblers. With such environments the country child develops into a strong and healthy adult. We can hardly expect to make the conditions of infantile life so healthful in town as they are in the country, but much can be done to brighten the life of the children of our great towns, to give a roseate tinge to their pale cheeks, and to strengthen and develop their muscles. Their dwellings should be improved, and places for their recreation in the open air liberally provided. The Earl of Meath has generously established in Dublin two gymnasia and playgrounds for children and the corporation are providing a gymnasium on the open space formed by the removal of an old prison in Green-street. Gymnasia for children are, however, required in all parts of this city and of other cities. As the child is in one sense the father of the man every effort should be made in favour of the physical,

moral, and intellectual culture of those who are to form the future men and women of the nation.

THE SANITARY CONDITION OF TOWNS IMPROVING.

The appalling high death-rates in towns which continued for many centuries have greatly decreased in the present one. The improvement is partly due to greater attention to personal hygiene and a higher standard of comfort, partly and chiefly to improved public sanitation. The "masses" are now, on the whole, better fed than they were formerly, their hours of labour are less, and they enjoy more holidays. The causes which rendered so many of the handicrafts unhealthy and even dangerous have been removed or their effects lessened. Before the second half of the present century the Public Health Acts enacted were few in number and, as a rule, were not mandatory on the local authorities. The English Public Health Act of 1872, amended in 1875, and the Irish Public Health Act of 1875, amended in 1878, were the most comprehensive and valuable sanitary laws ever put upon the statute-books of these realms, largely owing to the compulsory nature of many of their sections. Under the provisions of these and several subsequent Acts a great improvement has been effected in nearly all the large towns of these countries. During the ten years ended in 1850 the mean annual death-rate in London was 24·8 per 1000 persons living; in the decade ended in 1896 the rate was 19·9 or 4·9 per 1000 less than in the former period. In 1897 the rate was only 17·7, excluding the deaths of strangers in London. In Glasgow, where vast sums have been expended in the clearing of unhealthy areas and the erection of improved dwellings for the working classes, a great decrease has taken place in the general and zymotic death-rates. In the ten years ended in 1866 the deaths from all causes were in the ratio of 30·2 per 1000 of the population; in the five years ended in 1897 the rate was only 21·8. The death-rate in Liverpool in the years 1866 to 1875 was 31·3 per 1000; in the years 1887 to 1896 it was 25·7 and in 1897 24·4. The Manchester death-rate was 31 in 1866–1875; in 1887–1896, 25·3; and in 1897, 23·1. Similar statistics could be quoted in reference to almost every other large town.

THE INCREASE IN THE ENGLISH URBAN POPULATION HAS NOT CAUSED AN INCREASED DEATH-RATE.

In all parts of the world the mean duration of human life is decidedly less in the towns than in the country. In comparing the vital and mortal statistics of countries the relative proportion of their urban and rural populations is a factor of considerable importance. If in one country only 1 in every 10 of the inhabitants lives in a town, and in another country 1 in 5, then, *ceteris paribus*, a lower death-rate might naturally be expected as regards the former country. In England by far the larger proportion of the people are located in the towns. In the middle of May of the present year the population of the urban registration districts numbered 21½ millions out of a population of 31,397,078. What a contrast does not this enormous town population present to that of other countries, say to Russia? Of the population of that empire, which numbered last year 126,411,736, only 16,289,184 resided in the towns, some of which were indeed mere villages. Only 8 of the towns had a population exceeding 180,000 each. Notwithstanding the fact that an increase in the density of a population is unfavourable to health, the rapid increase in the English urban population has not sensibly counteracted the good effects produced by improved public and private hygiene. The density of the population of London has been doubled since 1851. It is truly wonderful that its vast population of 6,291,667, located on only 693 square miles, should have in 1897 so low a death-rate as 17·7 per 1000. This rate is not greater than that of a fairly healthy rural district. England well deserves the name she has received as the birthplace and home of sanitary science and practice. That the health of the English people continues to improve the following statistics prove:—

Mean Annual Death-rate in England and Wales.

1847–1850, 23·2; 1851–1860, 22·2; 1861–1870, 22·5; 1871–1880, 21·4; 1881–1890, 19·1; 1891–1896, 18·45.

The reduction in the death-rate has been chiefly effected by the improved state of the public health in towns.

Mean Annual Death-rate in the Towns.

1851–1860, 24·7; 1861–1870, 24·8; 1871–1880, 23·1; 1881–1890, 20·3; 1891–1896, 19·24; 1897, 16·84.

In the period 1851–1870 the deaths in the towns were 25 per cent. greater than the deaths in the country for equal numbers of the people; in the period 1871–1896 the excess was reduced to 13·5 per cent., or nearly one-half. *En passant* I may here remark that the death-rate is much lower amongst females than males. It may interest intending benedicts and strengthen their resolution to learn that the mean duration of life is greater amongst married men than is the case with celibates. No doubt the former are taken better care of. Attention has been called to the decided decline in the birth-rate not only in the United Kingdom but in most European countries; but it seems clear that such a decline must necessarily follow a diminished rate of mortality resulting in an increase of the numbers of the population upon which the birth-rate is calculated. The lowest birth-rates ever registered in England were in 1894 and 1896 and in these years the lowest death-rates were also recorded.

MORTAL STATISTICS OF IRELAND.

The death-rate in Ireland is for the whole country very low. In the ten years ended in 1896 it was only 18. In the same period the rate in Hungary was 35·6 and in Austria 30. The low rate in Ireland is largely due to the circumstance that by far the larger portion of the population reside in the open country. The urban bills of mortality are very high. In the decade ended in 1897 the death-rate was 24·65 per 1000 in the 23 largest towns. Their zymotic death-rate was 2·64. There is therefore a great difference between town and country death-rates in Ireland.

STATE OF PUBLIC HEALTH IN DUBLIN.

As this Congress is meeting in Dublin it seems fitting that some account of the sanitary state of the city should be given to it. Thirty-two years ago the sanitary staff of Dublin consisted of one whole man (an inspector of nuisances) and a small part of another man (the secretary to the Markets Committee). At present the staff consists of a superintendent medical officer of health, who holds also the position of public analyst and executive sanitary officer; 15 district medical officers of health, who hold that position *ex officio* as Poor-law medical officers; a sanitary engineer; a superintendent and assistant-superintendent of sanitary sub-officers—i.e., nuisance inspectors; 23 sanitary sub-officers; 3 inspectors of dairies; 3 food inspectors; an inspector of slaughter-houses; 2 inspectors (one a lady) under the provisions of the Shop Hours Act and about a dozen persons, exclusive of whitewashers and charwomen, engaged in disinfection operations and the removal of fever patients to hospital. The disinfecting premises have recently been improved and enlarged at a cost of £2000, and a large isolated house, the property of the corporation, has been fitted up at a cost of £500 as a refuge for persons whose dwellings are undergoing disinfection. Since 1895 no person has been appointed a sanitary inspector unless he proved his fitness for that position by a competitive examination. Sixteen of the sanitary inspectors hold certificates of competency granted to them after examination by the Royal Institute of Public Health. The estimated expense of the sanitary department, exclusive of the cost of making and maintaining sewers, was in 1897 £23,607. Salaries and wages amounted to £9068 10*s*. £1040 were, however, received as a Parliamentary grant in aid of the salaries of the sanitary officers and a considerable revenue is derived from the baths and washhouses and other sources.

Loans for the following purposes have been sanctioned and all but a small portion obtained and expended: for clearing unhealthy areas (on which the Dublin Artisans' Dwellings Company have since erected houses), £54,200; artisans' and labourers' dwellings, £137,323; new streets, by which slums were cleared away, £116,000; public abattoir, £16,700; baths and washhouses, £12,500; improvement in disinfection house, £2000; a refuge for persons whose houses are being disinfected, £500; a mortuary, £200; open spaces, £2900; offices for sanitary department and city laboratory, £10,000; underground sanitary accommodation, £2200 = £354,523. For the following purposes, which also tend to improve the public health, loans have been sanctioned and nearly altogether obtained: sewers and works connected with them, £62,107; works in connexion with public and domestic scavenging, £34,050; paving, flagging, and concreting, £421,988; fish and vegetable markets, £98,800; "private improvement"

expenses, £12,628. All these make a total of £984,096. For another great sanitary improvement—namely, the main drainage of the city—a loan of £350,000 has been sanctioned and is being expended. Lastly, if we add the cost of the improved supply of water to the city—namely, £720,000—we have a grand total of £2,054,096 expended on purposes all of which tend to improve the health and comfort of the citizens. When the main drainage and sewage precipitation scheme is completed—probably in about two years more—the Liffey will no longer be polluted and the sewage, now impounded for many hours daily, will flow uninterruptedly through the sewers.

I hardly venture to claim that the large sum of money expended in sanitary works in Dublin and the exertions of the sanitary department of the Corporation have been the chief means by which the reductions in the death-rate have been effected. I have, however, no doubt that if the sanitary staff still consisted of only one individual and part of another there would be much more fever in Dublin than there has been for some years past. In the five years 1876–1880 the death-rate was 29·5; in the period 1881–1885 27·4; in the next five years 26·8; in 1891–1895 26·1; and in 1896–97 26·3. In 1897 the death-rate was raised by epidemics of measles, whooping-cough, and scarlet fever. In the ten years ended in 1885 the mean zymotic death-rate was 4·1; in the following ten years it fell to 2·62, or 44 per cent. In 1896 the rate was 2·4, but in 1897 it rose to 4·5 in consequence of an epidemic of measles and slight epidemics of whooping-cough and scarlet fever. Notwithstanding these epidemics, and one of small-pox in 1894–1895, the zymotic death-rate for the five years ended in 1897 was slightly below that of the English towns. The figures are as follows: 33 largest towns, 2·84; London, 2·82; Dublin, 2·80. In the first half of the present year the rate was 1·7 in Dublin.

I have given these figures in proof that Dublin is not the hotbed of fevers which even some of its own citizens believe it to be. The visitors at this Congress may rest assured that they are not more exposed to contagion than they would be in London or Manchester.

PECULIARITIES OF THE DUBLIN DEATH-RATE.

If we considered only the zymotic death-rate and the infant mortality of Dublin, the sanitary condition of the city would appear to be as satisfactory as that of the English towns and even as that of London. Many sanitarians regard the infant death-rate to be as a measure of the salubrity of a district almost equal to that afforded by its fever mortality. In the following table I give the death-rate of infants under one year of age in the 10 years ended in 1897 in Dublin, London, and the 33 large English towns:—

Deaths of Children under One Year of Age in the Five Years ended in 1897.

—	Rate per 1000 of the estimated population under one year of age.	Rate per 1000 of the registered births.	Proportion per 1000 of the total deaths.	Rate per 1000 of the total population.
England and Wales	152·6	152·2	254·3	4·58
33 Largest English towns...	174·6	171·3	272·0	5·36
London	158·2	159·6	252·4	4·82
Dublin	171·0	169·3	166·4	3·92

In all Ireland the deaths of children under one year of age are, as a mean, about 99 per 1000 registered births. These figures prove that no larger proportion of the infants born in Dublin perish in the first year of their existence than is the case in the 33 largest English and Welsh towns. The small percentage of total deaths, which are those of infants, as compared with the English towns indicates a very high rate of mortality amongst those of greater age. Whilst the infantile mortality is less in Dublin than it is in the 33 largest English and Welsh towns, it is practically the same as that of the 67 smaller towns (with an aggregate population of 3,812,631)—namely, 169. In some of these towns the infantile death-rate was very high—in Wolverhampton it was 217; in Salford, 219; in Ashton-under-Lyne, 228; in Langton, 252; and in Preston, 262. The high infantile mortality is chiefly due to neglect and the physical evils arising out of poverty. Amongst the well-to-do classes about 6 per cent. of their deaths are those of children under five years of age, whilst out of every 100 deaths of persons belonging to the labouring classes 40 are those of children under five years of age.

The children of the poor suffer from the insufficiency and improper nature of their food. They are not adequately protected from cold in winter. It is melancholy to see tender boys and girls out in the streets in the depth of winter shoeless and with only the most scanty garments. Young persons offer less resistance to the influence of cold and wet than adults; yet even sometimes amongst the rich we see the naked legs and arms of young children exposed to a temperature which would make their parents shiver if they were not well protected by warm clothing. The Society for the Prevention of Cruelty to Children and the Police-Aided Society for providing clothing for poor children are associations which deserve the warmest sympathy and generous support of the humane public. They have done great good and could do much more if they were adequately supported. Deserving, too, of a great tribute of praise are the kind people who provide a day's "outing" in the country for the children of the slums and those, too, who secure for the pale seamstress and the tired shop or factory girl a few days in the country. The change may be all too brief, but it at least more than realises the earnest wish of the poor toiler expressed in one of Hood's most pathetic poems:—

> Oh, but to breathe the breath
> Of the cowslip and primrose sweet,
> With the sky above my head,
> And the grass beneath my feet,
> For one short hour.

WHY IS THERE A HIGH RATE OF MORTALITY IN THE ADULT POPULATION OF DUBLIN?

Amongst the poorer classes there is in every town a higher death-rate than prevails amongst the affluent classes. I have long been of opinion that as compared with London especially, and with many other towns, there is a larger proportion of the poorest classes in Dublin. It is admitted that Ireland is a very much poorer country than either England or Scotland. It is highly probable that this comparison holds good for town as well as country. If that be the case we may to some extent account for the high mortality from non-infective diseases in Dublin, as compared with the English towns, from the circumstances of the larger number of poor people in the former. Dublin and London cannot be fairly compared, for, as Dr. G. V. Poore truly remarks,[1] "London is very largely a city of wealthy and well-to-do people, most of whom must be looked upon as sojourners rather than dwellers in the city. Amongst such as these, who command every luxury and necessary in life, including change of air, death-rates ought to be low." Mr. Sergeant, in a paper published in the *Journal of the London Statistical Society* for June, 1864, advances the opinion that in comparing the death-rates of London and Birmingham an allowance of 1·5 per 1000 should be made in favour of the latter on account of the comparatively small proportion of the affluent classes which inhabit it. To our distinguished Registrar-General, Dr. Grimshaw, is due the merit of being the first to publish the rates of mortality amongst the different classes of the Dublin community. When similar information is given in the reports of the English and Scotch Registrars-General we shall then be in a position to form some estimate of the relative proportions of the poorer classes in Dublin as compared with London, Edinburgh, and other cities.

HOUSING OF THE VERY POOR.

The improvement in the viability of the working classes which has taken place within the last 30 years is to some extent due to the better dwellings provided for them. Owing to the benevolence of the late Mr. Peabody, Lord Iveagh, and other philanthropists a considerable number of healthful dwellings have been built for artisans and labourers. A still larger number have been erected by companies, some of which have been founded on semi-philanthropic, semi-commercial lines. In this city and its suburbs the Dublin Artisans' Dwellings Company own dwellings occupied by 2194 families, who pay from 1*s.* 9*d.* to 12*s.* per week. This company is now constructing 188 additional dwellings. The City and Suburban Artisans' Dwellings Company have provided dwellings for 234 families, who pay

[1] Dr. G. V. Poore: London, Ancient and Modern, From the Sanitary and Medical Point of View.

from 2s. 6d. to 6s. per week; the Industrial Tenement Company own a block of buildings in which there are 46 separate tenements let at from 2s. to 4s. per week. Many employers of labour, such as railway companies, brewers, distillers, &c., have erected improved dwellings for their employés. Fourteen years ago I suggested to the corporation the desirability of putting in force the provisions of the Housing of the Working Classes Acts. The suggestion was acted upon and at the present time the corporation have provided 375 separate dwellings, let at the following rents—25 from 6s. 6d. to 10s. (with shops), 12 from 4s. 9d. to 5s. 6d., 84 at 4s. 6d., 98 from 3s. 6d. to 4s., 98 from 2s. 6d. to 3s. 3d., 47 at 2s., 14 at 1s. 9d., and 23 at 1s. 6d. Although so much has been done in providing improved dwellings for the working classes the vast majority of them are still lodged in wretched tenements. A few years ago I had a kind of census taken of the city and found that 32,000 families were located in about 7000 houses, affording 1½ rooms per family. On the other hand, the remaining 22,000 families of the city occupied 17,000 houses.

Whilst much has been accomplished in the way of providing proper dwellings for artisans and the better class of unskilled workers, practically nothing has been done to improve the miserable state of the homes of the very poor. In every large town there are, exclusive of beggars, thieves, and vagrants, &c., many honest people whose precarious earnings barely suffice to keep body and soul together. Amongst this class are to be found small dealers, pedlars, hawkers, charwomen, rag-pickers, night-watchmen, the inferior class of seamstresses, porters, and labourers, the miserable creatures carrying placards termed "sandwichmen," and men and women engaged in many other poorly remunerative employments. Besides these there are the dull-witted and the physically feeble people who are only capable of earning the merest pittance. It is in the wretched homes of the poorest of these poor that the seeds of fever are developed as in a hotbed. Their dwellings are a peril to the whole community, for their inmates carry contagious matter into the streets, shops, factories, and other places. The effluvia from them taint the atmosphere, in the purity of which all are interested. It is the dwellings of the very poor which demand nearly all the attention of the sanitary inspector. He finds it almost an impossibility to get their owners—who are often nearly as poor as their tenants—to keep them in even moderately good condition.

Since 1879 more than 3000 houses have been de-tenanted and closed in Dublin on account of their insanitary condition; of these not one-half have been rebuilt or rendered fit for human occupation. The closing of insanitary houses and the clearing of unhealthy areas have, however, been of little benefit to the poorest of the poor. The people who live on the unhealthy areas have not returned to occupy the neat dwellings which replaced their wretched tenements. The rents of the new dwellings were beyond their means. The unhealthy areas have been cleared, but the condition of the people who dwelt on them has remained unchanged. They have sought on other areas low-rented tenements as insanitary as those from which they had been ejected. If all the lowest rented and consequently least sanitary of the Dublin tenement houses were compulsorily closed, where, save in the workhouse, could their inmates obtain shelter? I feel convinced that the ordinary landlords of tenement houses, the majority of whom are leaseholders only or yearly tenants, cannot provide proper dwellings at from 1s. to 2s. per week, the rent which the very poor can only afford. Dwellings so low-rented can only be provided by the municipality or by philanthropic societies and individuals. They will pay very little if any interest on the money expended on their erection and maintenance, but every unhealthy dwelling which they replace will be a distinct gain to the whole community. The replacement of unhealthy by healthy habitations means less illness, longer duration of life, and diminished pauperism. It may be said that if you give a dwelling to a man at less than its market value you pauperise him. To this it may be rejoined that children are not pauperised by receiving their education free; the students in the State-endowed colleges and universities are not pauperised by acquiring, not merely a general education, but money making professions chiefly at the cost of the taxpayers. We already give the poor medical advice and medicine gratis; let us go a step further and provide the most dependent of them with dwellings in which they can live under reasonably healthy conditions. An attempt is now being made to raise a sum of money sufficient to erect a block of tenements which it is proposed to let at from 1s. 6d. to 2s. a week. It is to be hoped that generous support will be given to those who are engaged in this meritorious project.

THE MUNICIPAL AUTHORITIES SHOULD BE ENCOURAGED TO PROVIDE WORKPEOPLE'S DWELLINGS.

The borrowing powers of municipal authorities are limited to a sum equivalent to two years' valuation of the town for rateable purposes. Thus, if a town were valued at a million pounds its governing body would be empowered to borrow two millions. When this restriction was placed upon civic authorities the money borrowed by them was expended nearly if not altogether on what might be termed unproductive works, such as the paving, sewering, and lighting of the thoroughfares, &c. It seems to me to be unreasonable that the money expended by urban authorities in providing artisans' dwellings, baths and washhouses, abattoirs and markets, from which revenues are derived, should be included in the amount authorised to be borrowed. Mortgages on these buildings as well as the security of the rates is required by the Treasury for loans granted in connexion with them. It is evident that as the loans for the erection of artisans' dwellings are to be placed in the same category as loans for sewers and other non-revenue producing works the power of municipal authorities to provide dwellings for the working classes must be extremely limited. It is to be hoped that this disability will soon be removed. The market value of the artisans' dwellings in the possession of the sanitary authorities should be ascertained and the sum found added to the amount allowed to be borrowed on the two years' rateable valuation system. Thus, if a corporation could borrow a million for unproductive purposes and that it possessed artisans' dwellings valued at £100,000, then their borrowing powers should be extended to £1,000,000.

RACK-RENT IN RELATION TO PRIVATE IMPROVEMENT EXPENSES.

In the abatement of nuisances involving structural alterations in a dwelling the expense has frequently to be defrayed by persons having little or no interest in the benefits derived from the structural alterations. In order to prevent this injustice, as it may be termed, an amendment of the Public Health Acts of both England and Ireland is necessary. The cost of private sanitary improvements insisted on by the sanitary authority is borne by the person who receives the rack-rent of the premises. The definition of rack-rent in the English Public Health Act of 1875 is not so simple as that in the Irish Act, which defines it to be two-thirds of the rateable valuation of the premises. Thus, if a landlord lets a house for £60 a year which is valued at £40 he receives a rack-rent and must pay for the cost of sanitary improvements, although he may have let the premises on lease for 999 years. In such a case as this surely it is the leaseholder who ought to pay for the improvements, as he alone enjoys them.

A curious point in connexion with private improvement expenses is the liability of the person who receives rent from the occupier for the cost of the improvements although he himself may pay a rack-rent. He is termed the "immediate" rack-renter. I know of a case where a person who paid £80 a year for a house valued at £75 was obliged to sub-let it for £60 in consequence of depreciation of house property in the street. Although losing £20 a year by the house he was obliged to pay nearly £50 in providing it with improved drainage and sanitary arrangements, whilst the landlord, who received £80, was by law exempt from contributing to the expense of the improvements. It seems only fair that every person having a beneficiary interest—present, proximate, or remote—in a house should be obliged to contribute to the expense of its improved sanitation, the proportion to be determined by the magistrate who makes the order for carrying out the improvement.

THE WATER-CARRIAGE OF FILTH.

When, in 1879, the Department of Public Health was placed under my direction I commenced to wage a determined war against the system of storing filth in pits which had prevailed in Dublin for centuries, exclusively in the poorer quarters of the city and partially in the other districts. To this storage of filth must be ascribed the polluted condition of the soil which still has not yet been got rid of. It was no

easy task to induce or compel the owners of houses to adopt the water-carriage system of filth removal, but the task has practically been accomplished. Unfortunately the occupants of the tenement houses too often do not take proper care of the improved sanitary conveniences supplied for their use and the landlords complain that they are constantly called upon to repair injuries to the sanitary arrangements due to the action or carelessness of their tenants. The Public Health (Ireland) Act provides that in the case of two or more houses having sanitary accommodation in common the tenants can be collectively proceeded against for the abuse of the sanitary arrangements. The law should be made to apply to single houses inhabited by two or more families. In this connexion I would like to express my strong opinion that every separate dwelling should be supplied with sanitary arrangements for its exclusive use. Those which are used in common by several families will never be kept in proper order. I may mention that in the corporation artisans' dwellings, Bow-lane, every tenement—and there are 24 let at only 2*s.* a week—has its own scullery and sanitary arrangements.

There are many persons, including medical men, who believe that the general introduction of the water-carriage system of filth removal has not been a benefit to Dublin but the reverse. They are under the impression that fever has increased since the old system of filth storage has been superseded. The statistics which I have brought before this Congress conclusively disprove the statement that fever has increased in Dublin; it has, on the contrary, decreased. In every town in the United Kingdom in which the water-carriage system has been adopted the public health has been improved. Dr. Scurfield, medical officer of health of Sunderland, shows in a report presented to the corporation of that town in 1897 that in 33 towns in which the water-carriage system of filth riddance prevails the deaths from enteric fever averaged 15 per 100,000 of the population; while in 33 towns in which the conservancy method remained the rate was 26 per 100,000. In the former the deaths from diarrhœa were in the ratio of 52 per 100,000, whilst in the latter the rate was 108. The deaths from all causes were 2·6 per 1000 more in the conservancy, than in the water-carriage towns. In Nottingham during the period 1887–1896 there was 1 case of enteric fever in every 558 houses from which filth was removed by the agency of water, whilst in every 37 houses having middens there was 1 case of this fever. At the International Hygienic Congress held in Madrid this year the following resolution was adopted: "That the general health of the population is improved and the spread of the disease prevented in towns and dwellings by the immediate removal of all foul matters and by a copious supply of pure water."

PREVALENCE OF TYPHOID FEVER IN DUBLIN.

The mortality caused by typhoid fever is greater in Dublin than in nearly every other town in the United Kingdom. In Ireland Belfast alone has a higher death-rate from this disease. On the other hand, diphtheria is very much less fatal in Dublin than in the English towns. I have come to the conclusion that both diseases have, to a great extent, a telluric origin; they seem to be in some way intimately connected with the soil. If, then, we take both and regard them as semi-malarial, Dublin will not occupy a worse position than the English towns. The deaths from enteric fever and diphtheria combined were in 1887–1896 in the ratio of 55 per 100,000 persons living in Dublin and 60 per 100,000 in London. In 1897 the rate was 54 in Dublin and 64 in London. In 1896 the mean diphtheria rate alone was 50 per 100,000 in London, Wales, Essex, Kent, and Worcestershire; in Dublin diphtheria and enteric fever combined caused 44 deaths per 100,000 inhabitants. Dublin has a supply of water of great purity; its street sewers can compare favourably with those of other towns; and the plumbers' work in its houses is as good as it is in the great majority of towns. Why, then, should there be so much enteric fever in Dublin? I have long been of opinion that the micro-organisms of this disease have an abiding place in its soils, which for so long a period were polluted by leakage from the filth receptacles and defective sewers of former times. I believe that, under certain conditions to which I have often referred in papers and reports, these malignant organisms escape from the soil into the atmosphere, from which they pass through various media into the bodies of human beings.

That there is a connexion between enteric fever and the soil is shown by the results of observations of the distribution of more than 4000 cases of the disease in Dublin. Where gravel forms the site of streets there is far more typhoid fever than in districts which rest upon the stiff boulder clay. This is clearly owing to the fact that the bacillus typhosus, which is aerobic—that is, requires oxygen—can get it more freely in the loose gravels than in the stiff clays. In the gravel, too, there is a much greater space for the development and movement of the bacilli. It has long been assumed that the soil of Dublin lying nearest to the river was always water-logged, and it was suggested that the drainage of this soil and its subsoil might lessen the prevalence of enteric fever. A few years ago I caused a number of wells to be sunk in the ground near the river and at the higher parts of the city. Long-continued observations of the height of the ground or subsoil water in those wells proved that in the higher parts the water came to within 4 or 5 feet of the surface of the ground, whilst near the river the water remained at from 12 to 18 feet from the surface. It seems strange that the surface of that part of the city from 50 to 70 feet above the level of the river at high water should be only 4 or 5 feet above that continuous sheet of subterranean water termed subsoil or ground water, whilst the low-lying districts have from 12 to 10 feet of dry soil. The explanation is, after all, a simple one. The low-lying districts rest on gravel, which permits the rain to sink into it very deeply, whilst the high grounds are stiff clays which retain the water. When a soil becomes infected by the *materies morbi* of typhoid fever it is difficult to eradicate it. The recent experiments of Dr. Sidney Martin, recorded in the supplement to the annual report of the English Local Government Board for 1896–97, show that typhoid bacilli put into soil multiply in it and ramify throughout it; at the expiration of 105 days they were quite lively. These experiments and the investigations of other scientists, especially those of Dr. Robertson, clearly prove that typhoid bacilli can live and multiply in soils containing organic matter. I feel satisfied that they are to be found in the soils of Dublin and other places. Now that the pollution of the soil in Dublin has almost ceased we may expect that the *pabulum* of the typhoid organism will gradually be used up, with consequent diminution of the amount of enteric fever.

OUR DAYS BETTER THAN THE OLD TIMES.

The belief that former ages were happier than the one we live in does not rest upon a foundation of fact. The "brave days of old" of the poet were too often days of pestilence and famine, of war and rapine, of might over right, of coarseness of language, of absence of public opinion as a censor of morals, and of sanguinary criminal laws. During many centuries Europe was periodically devastated by pestilences. In the fourteenth century the terrible "black death" carried off 25,000,000 of its inhabitants. Population stagnated; that of England remained stationary for three centuries, not so much owing to war as to pestilence and famine. In 1664–65 the plague almost depopulated London. In that long and gloomy period, so truly named the "dark ages," the towns were the hotbeds of disease from which their poisonous seeds were spread throughout the land. Their denizens were crowded into ill-ventilated houses in narrow, sunless streets. Their water-supplies were polluted by the oozings from cesspools which were almost as numerous as the houses themselves. There were no main sewers, no systematic removal of filth, no municipal sanitary organisations. Even as late as the last century Howard the philanthropist drew terrible pictures of the insanitary state of the prisons and even of many of the hospitals and orphanages. The wretched condition of the floating homes of sailors, even those of the Royal Navy, is graphically described in the humorous but truthful pages of Smollett. The present time is better than the old time. Leprosy and malarial fevers have vanished from these countries. Typhus fever, which once filled the wards of the Dublin Fever Hospital with patients, is now rarely met with. Fifty years ago people disfigured by small-pox might be seen in every street; now that loathsome disease is disappearing under the influence of vaccination and the improved hygienic conditions of towns and people. In this connexion I must express my satisfaction that vaccination is still compulsory in Ireland, although no longer so in England. I believe that the medical profession are practically unanimous in regretting that the Vaccination Act just passed permits in England and Wales the so-called "conscientious objector" to refuse to have his

child vaccinated. In Ireland, if vaccination is sometimes neglected it is not from want of belief in its efficacy or contempt of the law—indeed, the complete absence of agitation in Ireland against compulsory vaccination is a proof of that respect for law and order so characteristic of the Irish people.

SANITARY EFFORTS SHOULD NOT BE RELAXED.

Although a great improvement has taken place in the state of public health in these countries and in most parts of Europe a further improvement is required and is attainable. So long as two or three out of every thousand of the population perish annually from diseases which are termed "preventable" so long must the efforts of the sanitary reformers and professors of preventive medicine be continued. Phthisis, which is as fatal as the "preventable diseases," ought now to be included amongst the latter, for its nature shows that it, too, might be eradicated. We require, perhaps, some additions to and amendments of our sanitary laws, but what is most required is the thorough enforcement of the laws such as they are—and they confer great powers upon the sanitary authorities. The notification of infective diseases and the laws relating to disinfection should be strictly enforced. The proper isolation of fever patients should be provided for. The speedy and complete removal of filth from houses and towns should be secured. Healthy dwellings and cheap baths and washhouses for the most dependent classes of the community should be multiplied. The "unhealthy occupations" should be rendered innocuous, or at least less unhealthy. The injurious emanations from certain kinds of works should be prevented or reduced to a minimum. These are only some of the measures required in order to assimilate our towns as nearly as possible to that ideal City of Hygeia which Richardson has described.

The efforts of a sanitary authority to improve the state of public health cannot attain to a full measure of success unless supported by public opinion and private practice. One of the objects of such associations as the Royal Institute of Public Health and the Dublin Sanitary Association is to educate the general public on the important subjects of public and domestic sanitation. Just in proportion as the citizen is convinced that his health and longevity are favourably affected by the operation of the sanitary laws will he respect and observe them, even at personal inconvenience and some expense. Let us hope that the Sanitary Congress which this day commences its deliberations in this ancient city will be able to prove that it is in the power of the citizens of Dublin to make it one of the healthiest cities in the world.

ABSTRACT OF

An Address

ON

IRELAND: ITS CAPITAL AND SCENERY.

Delivered before the Section of Chemistry and Meteorology at the Congress of the Royal Institute of Public Health held in Dublin, August 18th to 23rd, 1898,

By JOHN WILLIAM MOORE, M.D. DUB., F.R.C.P. IREL.,

DIPLOMATE IN STATE MEDICINE AND EX-SCHOLAR OF TRINITY COLLEGE, DUBLIN; FELLOW OF THE ROYAL METEOROLOGICAL SOCIETY.

[DR. MOORE opened his presidential address to the Section with some words of welcome to the members, after which he proceeded to consider the climatology of Dublin.]

Dublin, the metropolis of Ireland, stands at the extreme western end of the beautiful Bay of Dublin, close to the mouth of the River Anna Liffey, along both north and south banks of which the city extends for a distance of some two miles. It is 292 miles in a direct line W.N.W. of London, 138 miles W. of Liverpool, and 69 miles W. of Holyhead, and is situated in latitude 53° 20′ N., longitude 6° 17′ W. It comprises an area within the municipal boundary of 3733 acres, containing in 1891 25,764 inhabited houses and a population of 245,001. The Dublin Registration District consists not only of the city proper but also of the populous suburban districts of Rathmines Donnybrook, Blackrock, Kingstown, Clontarf, Howth, Coolock, Drumcondra, Finglas, Glasnevin, and Palmerston. The population of this "Greater Dublin" was, in 1891, 349,594, and its extent is 24,693 statute acres. The origin of the city is lost in the mists of antiquity. The Greek geographer Ptolemy, writing A.D. 140 speaks of a small tribe, the Eblani, as having established themselves at Eblana ("Civitas Eblana"), which was probably the site of Dublin. The dark peat-stained waters of the Anna Liffey gave its present name to the Irish capital, for the Celtic *Duibhlinn* signifies the "black pool." Among the Irish-speaking population of the west of Ireland Dublin retains its ancient name of Ath-Cliath, or more fully Ballyath-cliath, the Celtic *Baile-atha-cliath* meaning the "town of the ford of the hurdles." From this name the obvious inference is that a wickerwork causeway stretched across the Liffey and that in its vicinity the town sprang into existence. The site of Dublin was originally not only beside a pool of dark water (*Duibhlinn*) but in a swamp, for the prefix "Anna" in the name Anna Liffey signifies literally a watery place, a marsh or swamp, annagh (*eanach*) being derived from *ean*, water. It is this untoward circumstance, perhaps, which in modern times has gained for Dublin so evil a reputation for the endemic prevalence of typhoid fever and diarrhœal diseases.

From a hygienic standpoint the meteorological factors of greatest importance in determining the climate of a given town or place are: (1) mean temperature; (2) extremes of temperature; (3) rainfall; (4) rainy days; and (5) relative humidity. Of somewhat less importance are: (6) mean atmospheric pressure; (7) amount of cloud; and (8) direction and force of the wind.

Mean temperatures.—Dr. Alexander Buchan has calculated the mean monthly and annual temperature of the city of Dublin on a mean of 40 years, from January, 1856, to December, 1895. His results are as follows:—

January	= 41·1°	July	= 60·3°
February	= 42·0°	August	= 59·4°
March	= 43·3°	September	= 55·6°
April	= 47·3°	October	= 49·4°
May	= 52·3°	November	= 44·5°
June	= 57·5°	December	= 41·6°

Year = 49·5°

Extreme temperatures.—Since January, 1865, the extreme readings of the thermometer in Stevenson's stand recorded in Dublin have been 87·2° on July, 15th, 1876, and 13·3° on Dec. 14th, 1882—a range of 73·9° F. The average annual range of mean temperature is not quite 20°.

Rainfall.—In the "Rainfall Tables of the British Islands, 1866–1890," published by the authority of the Meteorological Council in 1897, the mean rainfall at Fitzwilliam-square, Dublin, is given for the 20 years 1871–1890 as follows:—

	Inches.		Inches.
January	= 2·09	July	= 2·63
February	= 2·22	August	= 2·91
March	= 1·97	September	= 2·23
April	= 2·16	October	= 3·18
May	= 1·89	November	= 2·70
June	= 1·98	December	= 2·35

Total for the year = 28·31 inches.

February, 1891, was the driest month on record in Dublin. There were only two rainy days during the whole month, and the rainfall was but ·042 inch. September, 1865, also, had only three rainy days with a rainfall of only ·056 inch. An inch of rain—equivalent to a downpour of 101 tons of water on every statute acre—seldom falls within twenty-four hours in Dublin. On Oct. 27th, 1880, however, the measurement was 2·736 inches; on Aug. 13th, 1874, also, 2·482 inches of rain were registered; and on May 28th, 1892, 2·056 inches were recorded.

Relative humidity.—By this term is meant the percentage of saturation of the atmosphere with aqueous vapour. The relative humidity of absolutely dry air is 0, that of saturated air, when dew is deposited or fog forms, is 100. In Dublin the mean relative humidity in the twenty years, 1871–1890, was 82·5 per cent.

Mean atmospheric pressure.—Dr. Alexander Buchan calculates the mean monthly and yearly atmospheric pressure, reduced to 32° and mean sea level, in the City of Dublin during the 40 years—1856 to 1895 inclusive—to be—

	Inches.		Inches.
January	= 29·870	July	= 29·931
February	= 29·923	August	= 29·903
March	= 29·885	September	= 29·919
April	= 29·914	October	= 29·867
May	= 29·956	November	= 29·876
June	= 29·961	December	= 29·887

Annual Mean = 29·909 inches.

The absolute extreme readings of the barometer at any time taken by me were—maximum, 31·020 inches on January 9th, 1896; minimum, 27·758 inches in December, 1886. These readings assuredly represent the extreme range of atmospheric pressure, reduced to sea-level in Dublin—namely, 3·262 inches.

Amount of Cloud.—This climatological element varied in the 20 years, 1871-1890, from 64·5 per cent. at 9 A.M. to 56·5 per cent. at 9 P.M., the mean being 60·5 per cent. February is the most cloudy month (67 per cent.), May is the least so (55 per cent.).

Direction of the wind.—As regards this element, 14,613 observations were made during the 20 years, 1871-1890, with this result—N., 870; N.E., 941; E., 1409; S.E., 1267; S., 1323; S.W., 2051; W., 4030; N.W., 1750; calm, 972.

During the twenty years gales were recorded on 413 occasions, thunderstorms on 176 days, snow or sleet on 408 days, and hail on 622 days. In common with the rest of the British Islands Dublin owes its mild, equable climate in great measure to the proximity of the North Atlantic Ocean and its surface current of warm water, usually called the Gulf Stream, because its head-springs arise in the Gulf of Mexico. This sets in a north-easterly direction, laving in its course the western shores of Europe, and carries even into the Arctic regions north of Scandinavia temperatures from 20° to 30° above those due to the latitude alone. Other obvious causes of the mildness of the climate are the prevalence of south-westerly and westerly winds and the fact that a few miles south of the city lies a range of mountains with summits varying in height from 1000 to more than 2500 ft., while the keen, dry, searching easterly winds of winter and spring are much softened in their passage across the Irish Sea, so that during their prevalence the thermometer occasionally stands some 5° or upwards higher in Dublin than it does at Holyhead, although this latter place is actually on the sea. It is true that the converse holds good during westerly and north-westerly winds when severe frost sometimes occurs in winter in Dublin, while the thermometer remains decidedly above the freezing point at Holyhead. Yet these latter winds are never so piercingly cold and parching as those from easterly points. Nor is it in winter merely that the Irish Sea confers a benefit upon Dublin. In calm, clear weather in summer time no sooner has the sun mounted high in the heavens than a cool, refreshing sea breeze sets in towards the land, so that consequently extreme or oppressive heat is rarely experienced. Indeed, an oppressive atmosphere happens only when a damp, warm south-west wind is blowing with a more or less clouded sky. Temperatures above 80° in the screen in Dublin nearly always coincide with winds off the land, from some point between south and west and a clear or only slightly clouded sky. Among climatic epiphenomena the infrequency of thunderstorms and the relative frequency of hail showers in Dublin are worthy of note. In winter fog and frost often prevail in the city when a northerly breeze is blowing along the coast accompanied with a higher temperature and perhaps showers of rain. Lastly, in summer, with a westerly wind, heavy showers fall at times in the valley of the Liffey while the neighbouring higher lands enjoy dry weather.

This may, perhaps, be a suitable occasion on which to direct attention to a much-needed reform in the keeping of time in Ireland. For many years the time-standard in this country has been so-called "railway-time," more strictly Dublin time, or rather the time of the meridian of Dunsink Observatory, co. Dublin. It is, however, a matter for consideration whether Greenwich time should not be adopted as the standard for Ireland as it already is for Great Britain. If an objection is raised that a national question is involved it is only necessary to point to Scotland and Wales, where the national sentiment runs as high as it does in Ireland and which have long since adopted Greenwich time. As a matter of fact, however, the question is that of West European time, which is applicable to a zone extending 7½ degrees of longitude both east and west of the Greenwich meridian. France has lately adopted this time, just as Switzerland and Germany have arranged to set their watches by Central European time, which extends from 7° 30′ E. long. to 22° 30′ E. long. For many years Greenwich time has been adopted in the Postal Department and Irish telegrams are despatched and received by it. As a matter of public convenience the principle should be extended, and so the existing confusion in time-tables and in telephonic communication between Great Britain and Ireland would cease. Let the secretaries of the various steamboat and railway companies agree upon so desirable a reform and the thing is done. It would, however, be necessary afterwards to amend the Statutes (Definition of Time) Act, 1880, which provides that whenever any expression of time occurs in any Act of Parliament or other legal instrument it shall be held in Great Britain to be Greenwich mean time and in the case of Ireland to be Dublin mean time.

[Dr. Moore here gave English renderings of many names of places near Dublin, acknowledging his indebtedness to the "Origin and History of Irish Names of Places," by P. W. Joyce, and concluded his address with an account of a ten days' tour which he made in the spring of the present year through the south and south-west of Ireland, from Waterford to Lahinch and Lisdoonvarna in county Clare.]

ELECTRO-MAGNETIC EXTRACTION OF FOREIGN BODIES FROM THE EYE.

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THAT the electro-magnet is of value in ophthalmic surgery is fully established by the record of successful cases which have been published from time to time; but there is still a considerable amount of doubt and divergence of opinion as to its exact *rôle* as a strictly conservative agent. For example, Hirschberg gave his favourable results as 10 per cent., while Mayweg's were 31 per cent.; Knapp's results were even less favourable than those of Hirschberg. This is a point which can only be established by the record of series of cases preferably drawn from the practice of one individual or institution. As such, the following series, which represents the electro-magnetic extractions at the Birmingham and Midland Eye Hospital during a period of about two years, will, I think, prove of some value. I have also endeavoured to present some of the dangers and complications, both immediate and remote, of electro-magnetic extractions. The later records of some of the cases are unfortunately incomplete owing to the fact that the patients have failed to report themselves. During a corresponding period there were 16 cases in which the electro-magnet was introduced into the eye, but no foreign body was found. These I shall not detail in full, but I will give a short analysis of the results. I would mention that the instrument used was that of Snell and the current was supplied from a secondary battery. Strict antiseptic precautions were observed in every case.

I will give first a short account of the cases in which the eye had to be excised or eviscerated. Of these there are 4, 2 only being due to suppuration.

A.—FOUR CASES IN WHICH THE EYE WAS LOST.

CASE 1.—A patient, aged eighteen years, was admitted to hospital on May 30th, 1896, having been "struck in the right eye by a piece of steel" on the day of admission. The foreign body (a piece of steel) was floating in the vitreous and was visible with and without the ophthalmoscope when the pupil was dilated. The wound of entrance was through the sclerotic about ¼ in. behind the corneal margin on the outer side. A large piece of steel, measuring about ¼ in. by ⅛ in., was removed by the electro-magnet from the lower part of the vitreous, the scleral wound being enlarged for its extraction. The foreign body was easily removed by one insertion of the magnet and with the least amount of disturbance of the vitreous. The eye at the time was perfectly quiet, the wound in the sclera and a slight hæmorrhage into the lower part of the vitreous being the only signs of damage to the eye. On June 2nd the eye showed signs of infection, there being conjunctival and ciliary congestion, haze of the vitreous, chemosis, and œdema of the lids. The suppuration progressed in spite of treatment and on the 8th the eye was eviscerated.

CASE 2.—A patient, aged nineteen years, was admitted to hospital on June 30th, 1896, with a perforating wound of the left cornea and traumatic cataract. There was a foreign body in the vitreous just behind the iris. The foreign body

was removed by the electro-magnet on the day of admission. A small iridectomy was performed. On July 1st the anterior chamber was reformed; there was some muco-purulent discharge. On the 3rd there was congestion of the eye with discolouration of the iris. Haze of the media and suppuration set in and on the 8th the eye was eviscerated.

CASE 3.—A patient, aged fifteen years, was admitted to hospital on July 12th, 1897, with a perforating wound of the right lid and sclera. There was hyphæma. A foreign body was in the globe (?). The vision of the right eye equalled perception of light; there was no projection. On the 14th a large piece of steel was extracted by the electro-magnet. Recurrent hæmorrhages into the eyeball followed and the eye was excised on August 6th.

CASE 4.—A patient, aged twenty years, was admitted to hospital on Aug. 21st, 1897, with a perforating wound of the right cornea and sclera in the lower and inner quadrant. There were prolapse of the iris, hyphæma, and a traumatic cataract. A foreign body was in the globe (?). On the day of admission an iridectomy (of prolapse) was performed. A large piece of steel, measuring about $\frac{1}{4}$ in. by $\frac{1}{4}$ in., was extracted by the electro-magnet through the wound. A slight escape of vitreous took place. The eye quieted down very gradually, but never regained normal tension. On Sept. 20th the vision of the right eye equalled perception of light feebly; there was no projection. Excision was advised. In January, 1898, the globe was shrunken, the tension being − 1. The pupil was occluded. Occasional attacks of pain and congestion occurred. The vision of the right eye equalled perception of light; there was no projection. The eye was excised on Jan. 18th.

B.—FOURTEEN CASES IN WHICH THE EYE WAS SAVED.

CASE 1.—A patient, aged twenty-five years, was admitted to hospital on Dec. 3rd, 1896, having been "struck in the left eye by a piece of steel" three days before admission. On ophthalmoscopic examination the foreign body was seen projecting through the sclera into the vitreous. The scleral wound was slightly enlarged and the foreign body was easily removed by the electro-magnet. On the 21st there were flaky vitreous opacities. The vision of the left eye equalled $\frac{6}{9}$ with + 2 D.

CASE 2.—A patient, aged forty-three years, was admitted to hospital on March 8th, 1887, having been "struck in the right eye by a small piece of steel" two weeks before admission. On admission there were some ciliary congestion and fine posterior synechiæ. Dense membranous vitreous opacities obscured the fundus, but a sharply-defined whitish mass of about twice the size of the disc and with an elongated blackish centre could be seen in the vitreous. The black centre was thought to be a foreign body (steel), and on applying the magnet over the surface of the eyeball the mass was seen to move about in the vitreous concurrently with the movements of the magnet. The tension of the right eye was minus. On the day of admission the foreign body with lymph adherent was removed by the electro-magnet through a meridional scleral incision. On April 28th there were vitreous opacities and the ciliary congestion had disappeared. The synechiæ all gave way under atropine. Pigmentary and atrophic changes occurred in the retina and the choroid where the foreign body had lain. The vision of the right eye equalled $\frac{6}{12}$. On June 11th, 1898, the vision and the fundus were the same as they had been on April 28th, 1897. The patient had no trouble with it and was able to work all day in front of a furnace fire.

CASE 3.—A patient, aged fifty-five years, was admitted to hospital on March 8th, 1897. "Whilst shoeing a horse fourteen days ago something struck him in the right eye." On admission a foreign body was seen in the anterior chamber. A small corneal scar was visible and there was some iritis. The foreign body was extracted by the electro-magnet through a peripheral corneal section. On the 22nd the vision of the right eye equalled $\frac{6}{9}$.

CASE 4.—A patient, aged twenty-five years, was admitted to hospital on March 12th, 1897, with a wound of the left cornea and sclera. A foreign body was in the globe. On the day of admission a large piece of steel was removed by the electro-magnet. Prolapse of the choroid and retina was removed. The sclera was stitched. On the 19th there was perception of light by the left eye on the inner side only, but on April 10th there was no perception of light. He had had recurrent hæmorrhages into the vitreous and anterior chamber. There was no red fundus reflex. The tension was normal. On July 10th, 1898, the left eye was shrunken and atrophied. The lens was opaque and there was slight ciliary congestion. There was a large depressed scar of the cornea and the sclera downwards and outwards. The vision of the left eye equalled no perception of light and the tension was minus. There was no pain or inconvenience. Excision was advised. The right vision equalled $\frac{6}{9}$.

CASE 5.—A patient, aged seventeen years, was admitted to hospital on July 30th, 1897, with a perforating wound of the right sclera above. A foreign body of the size of a small shot was visible in the vitreous. The wound in the sclerotic was enlarged slightly and the foreign body was removed by the electro-magnet. There was some reaction after this; the pupil contracted and the aqueous became hazy. On Aug. 18th the eye was fairly quiet and the pupil was nearly fully dilated. On Sept. 16th there were dense vitreous opacities and a patch of choroido-retinal atrophy with pigmented margins at the lower periphery. The vision of the right eye equalled $\frac{6}{12}$ with + 1 D. On June 11th, 1898, there were fine vitreous opacities and the patch of atrophy as above. The vision of the right eye equalled $\frac{6}{9}$ with + 0·50 D. The patient had been at work since November, 1897.

CASE 6.—A patient, aged twenty-five years, was admitted to hospital on Sept. 15th, 1897, with a perforating wound of the left upper lid and sclera; a piece of steel was supposed to be in the globe. On the day of admission a foreign body was extracted from the vitreous by the electro-magnet. On Oct. 8th there were dense membranous vitreous opacities extending from the wound in the sclera above, downwards across the pupillary area towards the lower periphery. Details of the fundus were not made out. The vision of the left eye equalled $\frac{6}{24}$ with $\frac{+ 2{\cdot}5 \text{ D. sph.}}{+ 1 \text{ D. cyl. } \phi\ 90°}$ and that of the right eye $\frac{6}{9}$. On Dec. 15th the left vision equalled $\frac{6}{12}$ with $\frac{+ 2{\cdot}5 \text{ sph.}}{+ 1 \text{ D. cyl. } \phi\ 90°}$.

CASE 7.—A patient, aged twenty years, was admitted to hospital on Nov. 26th, 1897, giving a history of having been struck in the right eye by a piece of steel. On the same day there were some congestion and chemosis of the eye and a small wound of the cornea extended slightly into the sclerotic below. There was a small triangular wound in the periphery of the iris opposite the corneal wound. Hyphæma was noted. The fundus was not visible. On applying the magnet a semicircular ring of steel, $\frac{1}{4}$ in. in diameter and $\frac{1}{12}$ in. thick, was removed from the ciliary region. It was a little difficult to extract such a large body through the small wound, but after getting the piece of steel attached to the magnet by one end it came out, the magnet being gradually rotated as the ring emerged. There were some chemosis and iritis for a few days after the removal of the foreign body. On Dec. 14th the eye was quiet. A small detachment of the retina at the lower periphery had taken place and there were numerous vitreous opacities. The vision of the right eye equalled $\frac{6}{12}$ with + 3 D. The patient was discharged from the hospital. On the 21st the eye was quiet. There were membranous vitreous opacities and a detachment of the retina (lower and outer half) implicating the yellow spot. A semicircular ring of choroidal atrophy was observed at the site of the foreign body in the lower periphery. Fingers could be seen with the right eye at a distance of 1 metre. The patient refused to re-enter the hospital for further treatment and has since left the neighbourhood and is quite satisfied with his eye as it is.

CASE 8.—A patient, aged twenty-one years, was admitted to hospital on Nov. 27th, 1897, with a right traumatic cataract. A foreign body was in the lens. On the 30th the foreign body was extracted by the electro-magnet. On Jan. 3rd, 1898, the right lens was evacuated. On August 6th the eye was perfectly quiet and normal in appearance. The vision of the right eye equalled $\frac{6}{9}$ with + 12·50 D. sph.

CASE 9.—A patient, aged twenty-eight years, was admitted to hospital on Jan. 22nd, 1898, having been "struck on the right eye by a piece of steel" on the day of admission. On admission it was found that he had a perforating wound of the right lid and sclera. There was hæmorrhage into the vitreous and probably a foreign body was present in the globe. On the day of admission a triangular piece of steel, $\frac{1}{12}$ in. long and $\frac{1}{12}$ in. at the base, was extracted from the vitreous by the electro-magnet. No difficulty was experienced and no great disturbance of the vitreous was caused. On Feb. 9th the hæmorrhage into the vitreous was nearly all absorbed. There was almost

complete detachment of the retina. The vision of the right eye equalled perception of movements of the hand. On August 3rd, 1898, the eye was quiet, there was no pain, and the detachment continued as above. With the right eye fingers could be seen at a distance of 2 metres.

CASE 10.—A patient, aged forty-one years, was admitted to hospital on Feb. 8th, 1898, with a history of having been struck in the right eye by a piece of steel on the previous day. A large ragged wound was found in the sclera above and there was in all probability a piece of steel in the vitreous. On introducing the magnet through the wound a considerable amount of blood-stained serum escaped. On withdrawing the magnet it extracted a ragged piece of steel, $\frac{1}{8}$ in. by $\frac{1}{4}$ in., covered with a layer of whitish puro-lymph. A stitch was inserted into the sclera and the conjunctiva. On the 9th the eye was quiet except around the wound. There was a slight sloughing of the edges of the wound and congestion of the conjunctival and scleral vessels around the wound. On the 21st there was slight bulging at the site of the wound. The eye was perfectly quiet. There never was any reaction in the deeper structures of the eye. Dense membranous vitreous opacities occurred but no detachment of the retina. The vision of the right eye equalled $\frac{6}{12}$ with + 1 D. The patient was discharged from the hospital.

CASE 11.—A patient, aged forty-four years, was admitted to hospital on Feb. 8th, 1898, with a perforating wound of the left sclerotic; there was hyphæma and a foreign body was on the iris. The foreign body, a small triangular piece of steel, was extracted through the wound by means of the electro-magnet. The iris was replaced. On the 16th the vision of the left eye equalled $\frac{6}{9}$ with + 2 D. The pupil was round. On July 8th, 1898, the left vision was $\frac{6}{9}$ with + 50 D. There was a small spot of discolouration of the iris at the site of the foreign body. The pupil was round.

CASE 12.—A patient, aged twenty-four years, was admitted to hospital on Feb. 24th, 1898, having been "struck in the right eye by a piece of steel" on the day before admission. There was a small wound of the upper lid near the margin and also a small perforating wound of the sclerotic about $\frac{1}{4}$ in. behind the corneal margin above. Marked chemosis was present around the wound and on the inner side of the globe. The cornea was clear and there was a good anterior chamber. The iris was active and well dilated under atropine. The lens was clear. A large triangular membranous hæmorrhagic mass was seen lying in the vitreous. Extensive detachment of the retina was visible on the outer side. The rest of the fundus was not visible. The vision of the right eye equalled perception of light and the tension was − 1. On the day of admission a piece of steel embedded in a clot of blood was extracted by the electro-magnet. The magnet had to be inserted three times before the foreign body was extracted. On March 3rd fresh hæmorrhage into the vitreous occurred. The tension was normal (?). On June 30th, 1898, there was perception of light in the right eye. The pupil and the iris were normal and the eye was quiet and painless. Complete detachment of the retina had taken place and there were streaky hæmorrhages over the retina. The lens was clear.

CASE 13.—A patient, aged fourteen years, was admitted to hospital on April 20th, 1898, with a foreign body in the left anterior chamber which was extracted through a peripheral corneal section by means of the electro-magnet. The iris came out slightly and was afterwards replaced. On the 28th under atropine the pupil was round. The left vision equalled $\frac{6}{9}$ with − 0·50 D.cyl. ⊖ 180°. On June 30th the pupil was egg-shaped owing to a small mass of rust-coloured lymph having become adherent to the cornea and the iris.

CASE 14.—A patient, aged forty-eight years, was admitted to hospital on July 6th, 1898, having been "struck in the left eye by a piece of steel" three days before admission. There was a small wound of the sclera close to the corneal margin downwards and outwards. There were slight conjunctival injection around the wound and slight hyphæma. The iris was active and the pupil was round. There was slight haze of the vitreous downwards and outwards. A glistening triangular body was seen projecting just behind the iris on ophthalmoscopic examination with the pupil fully dilated. On the 9th a piece of steel, $\frac{1}{12}$ in. by $\frac{1}{16}$ in., was extracted by the electro-magnet from the ciliary region through a meridional scleral incision. There was considerable difficulty in extracting this foreign body. The magnet had to be introduced five times before the piece of steel became attached. On the 19th there was considerable conjunctival and ciliary congestion, which was persistent, and there was an inflammatory deposit on the back of the lens. On the 22nd the eye was quiet; the deposit on the back of the lens was still marked. The left vision equalled $\frac{6}{9}$. On August 4th the left vision was $\frac{6}{12}$ and the deposit on the lens was much less.

An analysis of the above cases gives the following results: eyes lost (including Case 4, Group B) 5; cases in which the shape and appearance of the eye have been preserved but only a small though useful amount of vision has been retained, 3; and cases in which good vision (from $\frac{6}{12}$ to $\frac{6}{9}$) has been retained, 10. Of these 10 cases 4 were in the anterior chamber or lens and 6 were in the vitreous.

As regards complications: suppuration occurred in 2 cases; detached retina in 3 cases; shrinking of the globe in 2 cases; recurrent hæmorrhage into the globe in 1 case; and deposit on the posterior surface of the lens in one case. It is noteworthy that not a single case developed sympathetic ophthalmia.

C. SIXTEEN CASES IN WHICH THE ELECTRO-MAGNET WAS INTRODUCED INTO THE EYE, BUT NO FOREIGN BODY WAS FOUND.

Of these 16 cases the eye was lost in 3 (excision advised in 1 other case); there were 7 cases in which the shape and appearance of the eye were preserved but with little vision; and in the remaining 6 cases good vision (from $\frac{6}{12}$ to $\frac{6}{9}$) was retained.

In the 3 cases in which excision was performed the foreign body was found to be embedded in the choroid in 1 case and in the optic nerve and sclerotic in the other 2 cases.

Owing to the incompleteness of the records 7 does not represent accurately the number which ought to be included in the second category. 3 out of the 7 are noted as having traumatic cataracts when discharged. These, if they had been operated upon, would probably come to be arranged with the last group. The complications noted in these cases were as follows: detached retina occurred in 2 cases; deposit of rust-coloured spots in the lens capsule in 1 case; and iridocyclitis followed by synechiæ posterior and iris bombé in 1 case. Here, again, there is no record of sympathetic ophthalmia as a complication.

It remains to explain why there is such a large number of cases in which the electro-magnet failed to extract the foreign body which was presumed to be in the eye. Some of the cases probably did not contain a foreign body. Such as these one hopes in future to be able to eliminate by the adoption of additional and improved methods of investigation, such as the use of the sideroscope, Haab's magnet, and the Roentgen rays. Judging from cases already published and from recent cases of our own I think skiagraphy promises to supersede all other methods. More accurate localisation would also help to reduce the number of failures, as the magnet could then be passed towards the exact spot at once, and there would be less likelihood of the object being missed or of its failing to become attached when surrounded by lymph or blood. Thus the surgeon would also minimise that disturbance of the vitreous and other structures of the eye which proved so detrimental in at least one of the above cases. Skiagraphy employed on the lines laid down by Mr. Mackenzie Davidson has proved a most accurate localising agent. In a certain number of cases the foreign body was undoubtedly firmly embedded in the coats of the eye and in these cases a powerful magnet such as Haab's might have been more successful than the small magnet, or having carefully localised the object by the means above mentioned an incision could be made directly over its site and the foreign body extracted by magnet or forceps.

In conclusion, I wish to thank the honorary surgeons of the hospital for their kind consent to publish these cases and my predecessor, Mr. Minnes of Kingston, Ontario, for many of the notes.

Birmingham.

NORTH DEVON INFIRMARY, BARNSTAPLE.—The annual meeting of the North Devon Infirmary was held on August 16th. The report showed that during 1897 the out-patients numbered 2722 and the in-patients 677, the average daily number in hospital being 48 and the average stay 26 days. The total ordinary expenditure was £2515 and the ordinary income was £2008.

THE CONSERVATIVE SURGERY OF THE OVARY.[1]

BY CHRISTOPHER MARTIN, M.B. EDIN., F.R.C.S. ENG.,
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THE physiological value of the ovaries may be best realised by noting the results of complete extirpation of both glands. (*a*) The woman becomes absolutely sterile; (*b*) menstruation ceases in about 95 per cent. of the cases; (*c*) the uterus and to a less extent the vagina and vulva undergo a process of atrophy; (*d*) the nervous symptoms of the menopause appear abruptly and violently—viz., heats and flushes, perspirations, palpitations, giddiness, depression of spirits, and a generally unstable condition of the nervous system; (*e*) in a considerable majority of cases there is a diminution or total abolition of the sexual instincts; and (*f*) the patient has a tendency to obesity. Now, if one ovary, or even only a portion of one ovary, be left behind none of these symptoms appear. There is physiologically no difference between a woman with half an ovary and a woman with two ovaries, while there is a great difference between a woman with half an ovary and a woman with none. It is remarkable how small a fragment of ovarian tissue is necessary to preserve the full influence of the gland on the body. Let me now very briefly direct your attention to certain operations on the uterus and its appendages, in which, by a little care, the surgeon may preserve the ovary and at the same time cure the patient.

In the first place, I need hardly point out that in cases of ordinary cystoma of one ovary—the other ovary being healthy—it is unjustifiable to remove both ovaries. If, however, the case be one of sarcoma of one ovary, then I think it is not only justifiable but that it is the surgeon's duty to remove both glands even if to the naked eye the other ovary appears normal. A sad experience of these cases shows that sarcoma is extremely apt to affect first one ovary and then the other. By taking away both I think we diminish the chances of recurrence. In cases of inflammatory diseases of the uterine appendages (salpingitis, pyosalpinx, ovarian abscess, &c.), if the disease be confined to the organs on one side only it is unnecessary to remove them on both sides. I have frequently removed the uterine appendages on one side only for inflammatory disease, leaving the appendages on the other side alone, or if adherent, merely freeing them. The results have been most satisfactory, and I have not in a single case had to remove the remaining appendages at a subsequent operation. The following is an illustrative case.

On Feb. 3rd, 1896, I operated on a woman, aged twenty-five years, with a large inflammatory mass to the right of the uterus. Her illness dated from her confinement several months previously. At the operation the mass proved to be an ovarian abscess, and I removed the diseased (right) appendages. The left appendages were buried in plastic lymph but not otherwise obviously diseased. I therefore contented myself with freeing them from adhesions. The patient made a good recovery, but for some time the pelvic roof remained fixed and indurated. Gradually, however, all signs of past inflammation melted away. Twelve months after the operation nothing abnormal could be detected on vaginal examination, and she was symptomatically cured. Early in July, 1898, she came to tell me that she was three months pregnant and in excellent health.

In cases of double pyosalpinx it is now my custom to perform vaginal hysterectomy and at the same time to remove the diseased tubes. In such cases I always endeavour to leave behind one or both ovaries unless they are obviously diseased. After removing a large fibroma of the ovary I was struck, when I came to examine the specimen, by the fact that the fibroma had developed in the medulla of the ovary and had spread out the glandular portion of the ovary (the cortex) as a thin sheet or capsule on its surface. It was quite easy to shell out the fibroma from this follicular capsule. The fibroma, in fact, was a mere foreign body growing in the substance of the ovary, displacing but not infiltrating its true glandular substance. In another case after I had removed an ovary of about the size of a hen's egg I split it open and found that I could easily shell out of its substance a small fibroma. In both of these cases it would have been easy to have saved the ovarian tissue proper by incision of the ovary, enucleation of the contained fibroid, and suture of the capsule. Since then I have examined numerous specimens of fibroma of the ovary, and in all of them I find the same relationship of the tumour to the gland.

Early in 1898 I had to operate on a young lady, aged twenty-six years, suffering from dermoid tumour of both ovaries. She was engaged to be married and was anxious, if possible, that one ovary should be saved. I found that the left ovary was the seat of a dermoid cyst of the size of a cocoanut, whilst the right ovary contained a dermoid cyst of the size of a hen's egg. I removed the left ovary entirely; but I found that I could easily shell out unruptured the small dermoid cyst from the substance of the right ovary and thus preserve about three-fourths of its glandular substance. I sewed up the incision in the right ovary with fine cat-gut. The patient made a good recovery. That the portion of ovary left behind was of physiological value is shown by the fact that since the operation she has menstruated regularly. Had I removed both ovaries she would have broken off her engagement to be married, whereas now there is no reason why she should not marry and become a mother. In a few cases where patients have been the subjects of cystic disease of both ovaries I have removed the ovary which was the more diseased and have performed resection of the ovary which was less affected. In these cases I found that the cystic disease affected only one pole of the ovary. I was able to remove a wedge which included all the diseased tissue and then to sew up the V-shaped gap by a fine continuous silk or catgut suture. The ovary seems to contain capillary blood vessels only; I certainly never had any trouble with hæmorrhage from the divided ovarian tissues. In this way I have now performed resection of the ovary in 5 cases and in all of them with the most satisfactory results. I have had the cases under observation for periods varying from four months to four years and in not one of them, so far, has there been any sign of recrudescence of the disease. 3 of the 5 cases were those of young unmarried women, aged respectively twenty years, twenty-five years, and twenty-six years; while 2 were married and were aged twenty-two years and thirty-three years. In all the 5 cases the preservation of even half an ovary was a matter of importance to them.

I know of no pelvic condition more troublesome to treat than that known as chronic ovaritis. It is associated with, if it be not the cause of, severe dysmenorrhœa, menorrhagia, ovarian neuralgia, hysteria, anæmia, and other disorders. The conscientious gynæcologist tries drug after drug and remedy after remedy with but discouraging results. Finally, in a considerable proportion of the cases he is driven to do something by way of operation to relieve the patient's sufferings. In the past in too many cases both the appendages have been removed, and in a large proportion of these I doubt if the patient has been much benefited by the operation. Menstruation usually ceases but the patient's sufferings continue. As an alternative the conservative operation of ignipuncture is well worth a trial. It may be done by vaginal section by either anterior or posterior colpotomy. The peritoneum having been opened any adhesions binding down the ovary are separated with the finger. The ovaries one after the other are then drawn into the vagina and punctured with the fine point of Pacquelin's cautery heated red-hot. Wherever there is an indication of a cyst in the cortex or an unusually thick portion of the capsule of the ovary the red-hot point is inserted. In this way from six to a dozen punctures, each about $\frac{1}{12}$ in. in diameter, are made in each ovary. The appendages having been replaced in the peritoneal cavity the vaginal wound is closed with catgut and the patient is put back to bed. I have now performed this operation of ignipuncture for chronic or cystic ovaritis 14 times. All the patients made an easy recovery from the operation. In 5 cases the operation failed to cure the patient, and in 3 of these I had subsequently to perform the operation of removing the appendages. One case has been operated on too recently for me to judge as to whether or not it will succeed. Of the other 8 I have been able to trace all but one patient, leaving 7 cases in which a cure has

[1] A paper read in the Section of Obstetrics and Diseases of Women at the meeting of the British Medical Association at Edinburgh, July, 1898.

certainly resulted. One of these 7 was a woman who had been married for five years but had never been pregnant. She became pregnant three months after the operation, and was confined at the full term of a living child.

If a parovarian cyst be examined in its early stage it will be found lying in the substance of the broad ligament quite distinct from the ovary proper. In some cases it is pedunculated and in others it is more or less embedded between the two layers of the broad ligament. In these early cases it is very easy to remove the cyst without removing the ovary. Where it is pedunculated the pedicle can usually be tied without including the ovary; where it is embedded it is not difficult to split the peritoneal capsule and shell the cyst out from between the two layers of the broad ligament. The wound in the broad ligament is then closed with a fine continuous silk suture. In more advanced cases the ovary is often spread out as a thin sheet over a portion of the posterior surface of the growth. Even here it will often be found an easy matter to split the capsule of the cyst and peel off the ovary from its posterior surface. If the other ovary be quite healthy this attempt to save the ovary on the same side as the cyst is perhaps unnecessary, if by so doing the surgeon at all increases the gravity of the operation. If, however, the other ovary be absent or have to be removed, then the surgeon should endeavour to save the ovary in removing the parovarian cyst. In cases of embedded cysts of the broad ligament, the surgeon is compelled to enucleate the cyst from between the two layers of the broad ligament, and then, *nolens volens*, he preserves the ovary intact.

If the uterus be completely removed of course the patient becomes sterile and menstruation ceases, but if at the same time one or both ovaries be left behind the nervous symptoms of the menopause are slight and often entirely absent. If, however, both ovaries be removed with the uterus these symptoms appear. I have observed, however, that patients who have had the uterus removed as well as the appendages suffer from climacteric troubles less severely than do those who have had the appendages alone removed. In some mysterious fashion the uterus bereft of its appendages is a source of disturbance to the nervous system. I have come to the conclusion that if both ovaries and tubes have for any reason to be removed it is better at the same time to remove the uterus. On the other hand, if the uterus has to be removed we should endeavour to preserve one or both ovaries.

It would be out of place in this paper to discuss at length the relative merits of the various surgical methods of treating uterine myoma. In my own hands panhysterectomy and vaginal hysterectomy have proved themselves much safer than either the removal of the appendages or the old clamp operation. An important argument in favour of hysterectomy is that it is generally easy to preserve one or both ovaries, whilst, of course, the essence of the removal of the appendages consists in their sacrifice. In abdominal hysterectomy, either where the old "clamp" operation or the more modern method of "panhysterectomy" is performed, it is generally easy to pass the uppermost ligature between the ovary and the fundus. The ovary is thus left on the proximal side of the ligature and has its nutrition maintained by the intact ovarian artery and veins. Similarly in cases of vaginal hysterectomy the upper ligature should be passed on the uterine side of the ovaries in order that they may be preserved. I have now performed abdominal hysterectomy for various conditions 42 times; 13 of these were "clamps" and 29 were panhysterectomies. In 27 cases I removed both ovaries with the uterus and in 15 cases I was able to leave one or both ovaries behind. I have performed 40 vaginal hysterectomies for various conditions. In 13 cases I removed both ovaries with the uterus and in 27 cases I was able to save one or both ovaries. I have been able to trace the after-history of most of these cases and I do not know of a single instance in which this conservation of the ovary has led to any untoward result.

In conclusion I would urge gynæcologists to give a fair and unbiased trial to the conservative surgery of the ovary. The reckless way in which in the past uterine appendages have been removed without adequate justification is the opprobrium of our art. The profession owes therefore a debt of gratitude to men like Pozzi of Paris and Martin of Berlin for their pioneer work in conservative surgery as applied to these organs. The brief account I have given is a summary of my own endeavour to follow in their footsteps, and I trust that it will encourage other gynæcologists to give a fair trial to these conservative measures.

VITALITY:
AN APPEAL, AN APOLOGY, AND A CHALLENGE ADDRESSED TO BROTHER PRACTITIONERS.

BY

LIONEL S. BEALE.

(Concluded from page 407, August 13th.)

THE INNER LIFE OF THE BIOPLASM.

So far in this appeal I have kept pretty strictly to comments upon the results of actual observation—facts I have observed, things I have seen with my own eyes, that I can see now, and can show to others; or to appearances which I can very distinctly remember, many of which will remain in my memory as long as it may last; but under the above heading I pass towards another realm in which I cannot be entirely guided by fact and observation. At the entrance, perhaps, they only wait.

Of the existence of the inner life of the bioplasm I have no more doubt than I have of the ordinary growth of living things known to all, but to see the changes which take place in the matter of a minute particle of bioplasm is at present possible only to the mind.

Notwithstanding the increased facilities we enjoy of using high magnifying powers and the large experience of their value recognised by hundreds, very little, I regret to say, has been recently added to our knowledge concerning the minute changes which occur in the very substance of every kind of living bioplasm. Nor do I think that we should be able to see much more of the inner phenomena of the bioplasm itself even if our magnifying powers were increased to ten thousand diameters—that is, an increase which, if it were possible to effect in all parts of the body at once, would make the magnified man appear many miles high.

The study of bacteriology has familiarised students with the use of high magnifying powers, but as yet comparatively few observers have used these high powers for the study of the tissues of man and the higher animals and for the investigation of the changes occurring during development. Further experience in the use of glycerine for examining and preserving animal tissues will, I think, lead to many demonstrations of the greatest interest and importance, for in some such way only can the bioplasts and the more delicate tissue elements be saved from pressure, just as they are all protected and supported by the interstitial fluid in the natural state during life.

Bioplasm, as I have already endeavoured to show, is the only living matter in the organism, and by it all formative changes are effected. Healing processes can take place only through the agency of living matter. Not only do all vital "properties" and powers, all inherited characters, all modifications in structural details, whether arising anew or inherited, depend upon bioplasm, but every kind of evolution in living things is rendered possible only by the existence and activity of this living matter.

The matter of the universe which has never been in the living state and can never live is overwhelming, indeed infinite in proportion to that which might live. The quantity of matter that *may* form a part of living things is so minute as to be inappreciable in the mighty operations and changes in the mass of Cosmos.

Though the matter that actually lives in organisms is so inconspicuous in appearance and insignificant in quantity that it often passes unnoticed, its marvellous inexplicable powers by which the rearrangement of non-living matter and the unaccountable changes effected in its behaviour have been the cause of wonder and astonishment of all philosophical observers and thinkers. Vital power exists in relation with all the minutest particles of living matter and there cannot possibly be any quantitative relation between the matter and the vital power by which it is influenced.

Since a particle of living matter so minute that probably twenty such or more would not weigh down a single red blood corpuscle, and that very minute living speck containing more than 90 per cent. of water, may be the means of conveying vital power which may afterwards influence enormous quantities of matter and afford evidence of its derivation, I must firmly cling to the idea of vitality being a power

belonging to the living world only—a power which, so far from originating in the non-living, actually controls it and causes it to exhibit structure, alters its composition, and brings about many changes that cannot be induced in any other way—changes that are known only in the living world where *Vital Power* reigns supreme.

A particle of living matter may, in fact, be far less than $\frac{1}{100000}$ in. in diameter, the power of which may be handed down for ages, and make its presence evident by its effects upon the composition and action of such enormous quantities of matter that probably no one who thinks about the facts will again declare that it is the infinitesimal particle of *matter and not the mysterious scientifically (!) indefinable power temporarily associated with it* to which its so-called actions, consequences, or effects are due.

The positions and relations of the innumerable particles of living matter among the tissues of complex organisms have already been pointed out and attention has been drawn to the facts which have led me to conclude that the difference between every form of living matter and every form of non-living matter *is absolute*, and that there is no relation of degree between these two states of matter, while all the evidence obtainable at this time is opposed to the dogma that "the living and the non-living are one." The phenomena which characterise all living matter, among which *movement, growth, selection, analytical power, and arrangements for synthesis* are pre-eminent, must be attributed to Vitality, while the formation of tissue and other formed matters has been shown to result from the *cessation of vital action*—in fact, the death of the particles that were living.

But besides the living particles in all the tissues and organs of the body, there are suspended in the blood, lymph; and chyle continually circulating with these fluids extremely minute bioplasts whose office it probably is to take up various substances dissolved in the fluids and thus assist in regulating the composition of the nutritive juices as well as discharging other important offices. Similar minute bioplasts also exist in the interstitial fluid, which circulates in the interstices of all the tissues and in and around the particles of bioplasm. In certain abnormal conditions these may grow and multiply and cause serious departures from the healthy state.

The rate of increase, and necessarily the quantity of non-living matter becoming living, is not uniform, in every part of a particle of bioplasm, or within the same period of time. In some situations, probably towards the centre of centres already existing, new centres appear which do not mingle with the adjacent bioplasm. It is, I think, in this way, both in health and disease, that not only one but many "nuclei" and "nucleoli" make their appearance in already existing bioplasm.

The vital power acquired by a new centre which was developed very slowly may be far greater and more comprehensive, and farther, much farther reaching, than that possessed by the bioplasm in which it arose. If the conditions are favourable and the nutrient matter abundant, the processes of growth and multiplication of bioplasm proceed rapidly, while if the conditions be more or less adverse the increase and the development are correspondingly slow. In the first case, however, the higher, the formative, the constructive, the tissue-forming power of the bioplasm is slight or may be completely lost, and the rapid multiplication may soon result in the production of bioplasts in great numbers which are very shortlived; and the entire number may soon die. In the last case, in the new centres may subsequently arise others, the bioplasm of which goes on growing and in certain instances multiplying very slowly and after some time may give origin to bioplasts which will take part in the formation of complete tissues and organs and perhaps become the parents of important and complex living tissues or organisms. Thus it may, I think, almost be held that there is somehow either a new origin or a mysterious concentration or evolution of vital power.

Only consider the complex arrangements and the long period of time which elapses before their completion, required for the evolution of germ and sperm bioplasm, particularly of the higher organisms; yet how minute is the active bioplasm particle when at last its evolution is complete, and how wonderful is, as it were, the concentration of vital power! Have we not here an example of the maximum of vital potency associated with the minimum of matter? The power seems to have been acquired not from already existing living particles, but to have been evolved as centres appeared within centres, and the result of these wonderful processes—the end—seems to have been anticipated and provided for, foreseen, as it were, from the first. This wonderful example of a very minute living particle in which amazing vital power is associated with an infinitesimal amount of matter—"a product of secretion" formed according to physiological laws! But is it not time that we were allowed to contemplate a great biological fact without making ourselves physiologically ridiculous?

Supposing the successors of primitive living organisms to have been variously modified in the course of thousands or millions of generations to the extent conjectured by some naturalists, as their environment, food, &c., have undergone modification; it is, I think, nevertheless certain that the broad characteristics of the living matter, its mode of growth, the manner in which it takes up nutrient matters into its very substance, rearranging their constituents and gradually, perhaps, undergoing conversion into tissue and other formed matters—those wonderful vital actions, potencies, powers—call them what you will—absolutely and fundamentally differing from any phenomena, properties, tendencies, possibilities or potentialities, that have been shown to exist or have been ascribed to any form of non-living matter yet discovered or supposed to exist—are still retained. And are we any nearer to anything approaching a reasonable explanation of the formation of living things and their changes if when we carry our thoughts back to the remotest past the imagination can conceive—if you will, long ere the first amœba particle began to stir or cilium to vibrate? The gulf between the living and the non-living must have then been as wide and as unfathomable as it is to-day, and as unbridgeable as when the first infinitesimal living particle burst forth into vital activity alone (?) in the universe of everlasting cosmic matter, as it is now when almost every spot upon the surface of our earth is peopled with evanescent but never-ceasing infinite life of very different endowments and powers.

Guided by the results of actual observation and by reasoning, with regard to the inner vital phenomena of all bioplasm we now come to this: in all life there seems to be movement of matter, movement in a direction *from centres* where vital power is communicated, the matter before it began to live having been caused to move *towards* the centre where some of its constituents having come into contact with the actually living matter—live. Now movement takes place in the opposite direction *from* centre. If we are to conclude that the centripetal movement of the non-living matter is in obedience to a law, may I not—nay, am I not forced to—conclude that the centrifugal movement of the matter now living is independent of or overcomes that law? Living particles for the time not only move notwithstanding the influence of gravitation but seem unaffected by this and some other *laws* to which every form of non-living matter is subject.

The surpassing interest of the problem must be my apology for venturing to lay before the profession the views which have presented themselves to my mind in the attempt to learn as much as possible concerning that mysterious agency to which I would limit the term *vitality*, or *vital power*, or *life*. But these words have so long had a much more general signification that I should like to find a word which might be applied to this mysterious factor which I not only feel compelled to acknowledge but hope to convince many other observers of the existence. Though offending against etymology, may I venture to coin a convenient word by help of Greek and German—the most philosophic of ancient and modern languages—Biokraft—in the sense I use "vitality" and "vital power"?

From the bioplasm which constitutes the earliest speck which represents man or any animal to that of which the degenerate pus-corpuscle is composed—bioplasm which has for ever lost all formative constructive power, but may multiply exceedingly and rapidly—the inner life of the bioplasm, the wonderful vital changes in essential nature and characters alike, are carried on in centres so central as to be invisible to us with the aid of the highest powers at present obtainable. It is here that the communication of wonderful power from the already existing bioplasm to the new matter actually occurs.

Difficult indeed is it to discover, even to imagine, any *laws* already defined, which govern, regulate, or account for the phenomena of the matter concerned in the inner life of the bioplasm. What evidence can be advanced in favour of the operation of gravitation in these and other vital changes,—of cohesion, of affinity, of proportion? Are not

heat, light, and electricity evolved in living organisms under conditions totally different from those which obtain when these are evoked in the non-living world—different indeed from those existing in any laboratory? Many facts connected with life are known and new facts are continually being discovered, but what is known concerning *laws* that govern the evanescent living state? The instant death has occurred the dead matter is subject to the operation of ordinary law.

The constitution of each living particle in nature is probably constantly changing, and even in the case of living particles which seem to retain their vitality for a long period it is more probable that vital changes are constant than that all change ceases even for a moment. Vital change continues without a moment's interruption in cases of extremely prolonged "hybernation." In a living particle sometimes much, sometimes little, of the nutrient matter is appropriated. In some cases if the products resulting from the death of living matter unduly increase to its detriment, and if not soon removed may cause its destruction. In the perfectly normal condition, however, neither the living matter, nor the non-living matters about to live, nor those that have lived disturb the balance.

Undoubtedly, as already remarked, while we contemplate the phenomena of the inner life of the structureless bioplasm or living matter we enter upon the consideration of what is at least at present beyond demonstration. It is here, if I mistake not, is hidden the mystery of mysteries of life and of all living nature. Though to my mind there seems but one conclusion possible, it is pretty certain that this conclusion will at present be accepted by few.

I therefore plead for free and open discussion of this great question of vitality from the point of view I have indicated, for whether what we have so far learned concerning the secrets and mysteries of living nature leads, or tends to lead, us towards the conclusion that all life is but a necessary outcome of everlasting matter, of the cosmos, of the universe, and is determined by eternal laws coeval with origin—or to the conclusion that the first creation of life is a comparatively recent introduction—an addition just limited to the external layers of our earth, and therefore bearing but a very insignificant proportion to the whole matter of which our world is made, the question is surely worthy of debate. It has been considered by the most thoughtful of many generations during thousands of years and cannot be regarded either as already determined or so sacred and so absolutely insoluble and so utterly beyond the comprehension of the best, the wisest, the most intelligent of men, as to be regarded as for ever beyond the capacity of the human understanding, and therefore an altogether impossible and hopeless inquiry. Again, let me press upon my readers' attention that during the last half-century the circumstances are wholly changed. Our knowledge of minute structures increases year by year. No one can compare the recent editions of standard works upon microscopic anatomy with a book published twenty years ago without being convinced of the great progress of minute anatomical investigation, though there is nevertheless much difference in opinion concerning many of the most important and fundamental questions which we ought to endeavour to determine by fresh investigations and other methods of preparation.

But if it were set aside by authority and the general concurrence of the thoughtful, or even forbidden by some law carried by a two-thirds majority, it would only be for a very few years that inquiry could be stifled or stopped or deemed by general consent to be wicked or declared illegal. It is certain that among us at least some few would still remain rebellious and as determined as hundreds and thousands before to study living nature in their own way, with the aid of the best instruments of research that could be obtained, and bring their observations, their conclusions, nay, their conjectures, before their fellow students of natural knowledge. On such grounds every real student would seem to have a right to ask for the patient consideration and discussion of the results of his investigations by his fellows, and a right of appeal against the dictation and authority of any party that happens to command for the time what has been called the general assent of all intelligent persons, nay, notwithstanding another doctrine had been accepted by an enormous majority and propagated as a new religion.

I appeal against the acceptance and absolutely decline to accept any mere physico-chemical hypothesis of life whatever, or the dogmas that life originated in matter, that life and non-life are governed by the same "laws," and that the living is but a form of the non-living. I plead, further, that scientific conjectures on both sides of a great question like this ought to be thoroughly considered.

Whatever may be the explanation, for more than thirty years past the views, the assertions, the working hypotheses, the conjectures, the assumptions of those who declare for purely physical doctrines of life have unquestionably been afforded advantages which have been most unreasonably and most unfairly denied to those who differ from them; not only so, but it has been shown that many doctrines now accepted on the ground that they are supported by reason are and have been absolutely opposed to reason from the first, and cannot be entertained by anyone whose views are guided by reason—such, for example, as the dogmatic assertion "man is a machine," "growth is a form of aggregation," and many, many more which have been collected and criticised in "Protoplasm." For nearly half a century there has been a dead set nearly everywhere in favour of purely physical doctrines of vital action, which from the very first have been scientifically untenable.

It is not known to what degree of minuteness the division of particles having all the vital powers and properties of the organism and infinite powers of growth and multiplication, might be carried without destruction. On the other hand, the undoubted fact of the vital influence of an excessively minute particle of parental bioplasm in causing vast quantities of matter to be so arranged that it assumes not only the general form and character of one or both parental organisms from which it was derived, but likeness in many minute details—likeness in form and colour, in feature, likeness in thought, in action, likeness extending even to the form and character of some of the less important organs and tissues—one would rather infer that at least in man and the higher organisms there was a point beyond which division would mean imperfection in subsequent vital processes or absolute destruction of life. But the degree of minuteness to which I refer is probably in many instances less than the $_{10000}$th of an inch. The nature and far-reaching influence of vital power carried and represented by so excessively minute an amount of matter is almost staggering and yet there seems little doubt that the conclusion ought to be accepted.

The evolution of centre within centre, the emanation of new centres in centres more central than has ever been seen, is, as I have said, not demonstrable. Nevertheless, various considerations render it highly probable that the new vital powers are communicated to the non-living material particles in a state of division so minute as at present to be far beyond our means of investigation, but the idea seems to be in accordance with reason. It is probable that here occurs the separation from one another and the rearrangement of the elements (?) of various substances which occur in all living—a rearrangement effected by that power which has so far eluded investigation—the impossibility of the existence of which has so often been confidently proclaimed.

It is in these invisible centres of living matter that vital power to which the natural characteristics of organisms made manifest long afterwards is active; also those new endowments which are the cause of the appearance of new characters visible at a later period in the fully-formed organism and powers inherited from pre-existing organisms are imposed. This, as it seems to me, is indeed the only situation where, and the only time when, the *evolution* of all developmental peculiarities, differences of form and structure, must be determined—long and long before the slightest evidence of any changes in character can be indicated, and it seems to me that it is not possible to conceive such a living centre without a circumference, and the idea therefore involves the occurrence of never-ceasing phenomena the very reverse of those which are presented to the mind of the astronomer.

Such are, I venture to suggest, the conjectures of what probably occurs in the unseen and so far invisible centres of living matter, which have presented themselves to my mind as reasonable. I have only ventured to consider them in the hope of lighting upon some hypothesis which may help us to pursue further the wonderful possibilities of the inner life of particles of living matter, the existence of which is almost forced upon the mind that tries to penetrate into the innermost mysteries of vital evolution.

Question of a vital unit.—Considering the above points one feels inclined to inquire whether or no there can be a physical or chemical atom incapable of further division or capable of infinite subdivision—by the agency of vitality; and to

speculate as to the point when the subdivision of living matter begins to effect reduction, and at length destruction, of vital power. Though feeling almost hopelessly incompetent to attack so difficult a problem I cannot resist the temptation of again referring for a moment to the question of a vital unit. Of elementary organs there can be no doubt, for every complex organ is made up of such units, though we cannot anatomically separate one from its neighbours, and it is impossible to isolate one in an active state, but in some of the so-called lower forms of life they are so developed and can be examined—units concerned in function being demonstrable.

But the most important of all is not actually separable and demonstrable, though I consider it is established by anatomical evidence. In man and complex organisms in which the nervous system is highly developed nearly all such inseparable units extend without any solution of continuity rom nerve-centres to the ultimate peripheral distribution of the finest nerve-fibres and their bioplasts; and, as I think I have made out, *back again* to the central bioplast, the so-called nerve-cell. I have tried to prove ends and end-organs in which nerves end and have utterly failed. I therefore still must hold to the existence of complete circuits in every nervous system and believe the very simplest—the unit, the elementary nerve-organ, is a complete and *uninterrupted circuit*.

Although, as already stated, the division of living matter may in some cases be carried wonderfully far without any loss whatever in power, there must be a point beyond which division could not be carried without death. Looking at the structureless, colourless, moving, living matter, say, of an amœba or a mucus corpuscle, one would necessarily feel it difficult to regard a minute portion of a semifluid substance capable of movement in all directions almost like a portion of water, as a unit. It is quite impossible to form an idea of the size beyond which division without destruction is possible in all cases, and it is probable that the size would differ in different kinds of living matter, and perhaps in the same kind in different states, as, for example, during a period of active nutrition and growth, and at a time when these vital processes were very slowly performed. I incline, therefore, to the view that there is a vital element, a vital unit not mathematically fixed, but, like all living, capable within certain limits, of variation in size, and rate of growth, without detriment. From the chemical point of view I cannot imagine a living molecule of definite chemical composition or of definite atomic constitution; for all living matter seems to be the seat of incessant change, physical and chemical; governed, regulated, and determined by vital power.

A living atom is, to my mind, impossible in thought, for is not the idea of living without moving, without constant changing of the relative position of particles of matter to one another, impossible? It would seem that when a particle of matter bursts into life there would be something approaching absolute contact between elements or perhaps a sort of fusion—an incorporation of the non-living by the living. If this be so the idea of life being in any way derived from non-living can only be entertained by doing violence to reason in submitting to authority. It is by submission to authority only that anyone who thinks over the facts can look into a living organism and assert that it is like a machine he is able to make; that our tissues and organs by which we work, our very thoughts, are due to anything like a mechanism the various parts of which have been first made and afterwards fitted together before they begin to work. The body may be called a molecular complex machine for the transformation of energy—a laboratory without apparatus—without a chemist; and death regarded as a breaking down—a disintegration of the several parts of the machinery, but there is not a shadow of foundation in fact for such a doctrine.

The idea, then, of one single separate living particle is, I think, untenable, for it involves an unknown centre and unknown circumference—multitudes of particles or parts in constant motion, frequent contact, never-ceasing change while the living state lasts—particles of different sizes, different constitution, of different ages.

There is no evidence as far as I can ascertain in support of the proposition that vital power was directly or indirectly derived from anything upon or in the earth, water, or air. Nor has it been shown that at the death of any particle of bioplasm its vital power is resolved or changed into anything that belongs to a category in which matter, its forces or properties, can be included. Nor, I believe, has it been suggested that if life had never appeared on the earth the vast non-vital cosmic phenomena would have been widely different from what they are and have been, or that sun, planets, or other heavenly bodies at a distance from us would have been in any way different from what they appear to be. In short, that however many millions of ages we may postulate, no adequate reasons can be advanced in favour of the doctrine that the living has been derived from the non-living or that the living is in any way an outcome of the cosmos necessary or accidental. There seems to be no connexion between the state of our material world previously to the appearance of life and living nature.

I do not believe that anyone who has studied and pondered over the mere movements he has seen in clear, structureless, colourless bioplasm, to say nothing of the manner in which various kinds of formed material are, as it were, laid down by it, will dismiss these life movements from his mind, as examples of ordinary molecular or undulating movements, and tissue formation as an instance of accretion or aggregation or deposition from a fluid; for between such physical processes and growth there is a vital difference. Does not philosophy, and more than philosophy, separate all living from all non-living?

I feel grieved to think that one who has undoubtedly taught more of us to think than all other writers and thinkers of our time, and whose great intellectual achievements as well as his philosophical and systematic arrangement has benefited all thoughtful students of natural knowledge, should have adopted the views he enunciated in his chapter on Life. I have often desired to discuss with one of Mr. Herbert Spencer's disciples the facts and arguments advanced, but so far no opportunity of doing so has offered. The objections which must have occurred to many biologists appear not to have been considered. The doctrine is undoubtedly inconsistent with many facts of living nature and I do not believe it can be successfully defended in accordance with reason.

For long, indeed, have I been hoping to see some further developments and explanations of Mr. Herbert Spencer's views concerning Life, or at least articles in defence of his doctrines[1]; but, as far as I know, not a word of explanation or any expression of doubt, or promise of reconsideration has been vouchsafed—not an admission of the least possibility of his views upon life being inconsistent with actual vital phenomena, nor a suggestion as to the meaning or explanation of the real nature of what all may see in the microscope as now demonstrated in every course of biology.

Growth is certainly not in any way a modification of the process which occurs when carbon accumulates on the wick of an unsnuffed candle. This is not *growth*, and I maintain that there is no "community of nature between organic and inorganic growth," as affirmed by Mr. Herbert Spencer. *Growth* implies much that Mr. Herbert Spencer ignores, and, as I have often pointed out, he uses the word *growth* in two totally different senses ("Protoplasm," p. 154). Crystals do not *grow* as living matter *grows*, and as all living things grow. The processes are absolutely distinct and the "*growth*" of living things implies Life, and such growth never occurs in the absence of life.

Microscopical work with high powers.—When I began to work with the microscope like my teachers Todd, Bowman, and George Johnson, I seldom appealed to powers magnifying more than 250 diameters, but before long I found there was much more to be discovered in the minute arrangements of some of the simplest tissues than I could demonstrate with that degree of magnifying power, and I obtained from Powell and Lealand powers of about 500 and 700 diameters. As the plan of preparation of specimens became more perfect, new demands for successfully examining them arose, and about 1855 several $\frac{1}{8}$ths of good defining power were produced, and in 1860 they made for me a $\frac{1}{16}$th, by the aid of which glass several drawings of animal tissues were made and published in various memoirs between 1862 and 1870. In 1864 the same makers succeeded in giving me the advantage of $\frac{1}{25}$, which magnified nearly 3000 diameters. The "thin glass" difficulty was overcome and one soon became able to clean the glasses, mount the specimens and with care as regards illumination get some drawings on wood blocks for illustrating my investigations.

About this time my ardour was somewhat damped by the little notice German observers took of my work—a line or so and my name seemed to be all that the most distinguished

[1] See "Protoplasm," fourth edition, p. 143, *et seq*

mong the minute anatomists considered I deserved, even before 1870, and since that date, perhaps because I became professor of medicine and was engaged in practice as a physician, some of my German anatomical friends seem to have regarded me as an extinct observer—a fossil.

A few months ago, however, I was delighted to receive from my old friend, Professor Dr. Albert v. Kölliker, his memoir, "Die Energiden von v. Sachs im Lichte der Gewebelehre der Thiere," in which to my "Germinal Matter (Bioplasm) and Formed Material"[2] have been assigned what I cannot but regard as pleasant places among the results of the labours of those for whom all observers have the highest respect and regard. Soon my spirits rose, my vitality improved, and some of the most important of my tissues seemed to regain some of their old elasticity. "Bindegewebe" and "Intercellular-Substanz" excite in me fresh emotions, and I almost long for further friendly contention as to their nature and origin, while I cannot for long resist the temptation of again attacking from my point of view the structure of the outer part of the cerebral convolutions. I hope some rising observers will at least contest with me the fundamental question of the central and peripheral general distribution of nerve fibres, say, for preference, in the little hyla, but I am equally ready for the investigation to be on the bat's wing, the white mouse, or on man himself. Nerve distribution just beneath mucous membrane, or to striped or unstriped muscle (mylohyoid muscle, bladder of the frog, are advantageous for the purpose). Any microscope, any power, any illumination, any method of preparation. I press my conclusion as to there being "no ends of nerves, and the continuity of a nerve fibre to and from its central origin, and peripheral distribution"; my specimens forcing me to this conclusion and, in my judgment, rendering no other inference probable.

Bioplasm undoubtedly receives and transmits impressions from without and from within and by continuous nerve fibres are nerve currents conducted to and fro. Nerves and nerve centres could not exist and could not have been formed but for their connexion with bioplasm or living matter.

With the utmost advantages I could obtain as regards illumination, the best object-glasses, and the most careful preparation of specimens for special examination with high powers, I could not get any farther towards the solution of the constitution of the bioplasm; and whatever may be done in later times I feel confident that no means yet discovered will enable us to make out any structural arrangement which will afford us a correct idea of the manner in which the colourless, structureless bioplasm effects the changes which are undoubtedly somehow achieved by it. Nor do I believe that if the living matter could be magnified many thousand diameters we should see more or learn more concerning this inner life of bioplasm.

In truth, so far I feel as regards the investigation of the ultimate constituents of living matter doubts and difficulties somewhat similar to those which astronomers experience in endeavouring to form an estimate of the contents of the universe. "We are to reflect that all objects which we can see constitute in all probability not one-thousandth, perhaps not one-millionth, part of the material heavens."[3]

However, as it seems not improbable that some new kind of glass may be discovered superior to any now used for optical instruments, and particularly for high-power objectives, great advantage may be gained as regards successful investigation of which at this time no idea can be formed.

It may surely be a question how far scientific workers are bound to obey scientific authorities or any authorities supposed to be supported by being placed at the head of those who work at science, whether superiors, equals, or inferiors. Few men who have long studied and worked hard simply because they loved to learn, to satisfy a right curiosity, a craving to know, will feel inclined to bow to dictators of any kind, not even if backed by what is called public opinion or a general consensus in favour of a particular view. Though scientific work and original thought may have a tendency to make men rebellious, of all tyrants a scientific tyrant may be not the least inconsistent, the least arbitrary, the least unreasonable, or the least inconsiderate.

Undoubtedly for a long time certain scientific men have been permitted and encouraged by the public to wield authority and have been generally spoken of as "authorities." But in science there is no authority (except reason). Some of these "authorities" have done their best in England to enforce the acceptance by the public of certain mechanico-chemical doctrines of life, and some of them have professed to be able to account for vital phenomena by the properties, actions, and interactions of ordinary matter. Undoubtedly any authority can prevent, destroy, degrade, ill-use, or kill in an instant, what it may seize among the living things it calls mechanisms, but he is as absolutely incapable of making, forming, causing to be evolved, the smallest particle of anything like the living matter of the meanest and lowest of the numberless living organisms around, as he is of influencing in the slightest degree the mighty phenomena of suns and worlds.

I challenge those who still insist that life is a form of, or in some way due to, physical and chemical change only to consider the changes of bioplasm and then to bring forward the evidence upon which their conclusion is based and also the facts upon which they rely to disprove the existence of vitality as a factor, a power distinct and not in any way emanating from, or originating in, ordinary matter, its forces, properties, or activities. Nay, I believe them to be unable to show that at this time any evidence justifies us in inclining ever so slightly in the direction they indicate, as to accept the notion that in some distant time the physico-chemical doctrine of life may perhaps be established. I challenge them to reasonably account for the facts of the simplest vital actions in the absence of some directing arranging selective agency unknown to science.

Who will prove that the *growth* of any living particle of any living thing in nature, its power of movement, its power of transmitting to matter, its analytical, its constructing, its formative capacity, depends upon any chemico-physical or other material properties or characteristics of any form of non-living matter known to science or likely to be discovered? Surely we might as well essay to discover good and evil, love and hate, truth and its opposite, or right and wrong in machines, in chemical compounds, crystals, or atoms, as to teach that the living and non-living are one.

The question is of universal interest and, in my opinion, so very important that it deserves much more consideration and thought than has yet been accorded to it, especially in its bearing upon our highest hopes and interests.

As biology is now receiving much more attention than heretofore and in all probability will soon be one of the subjects of general education and taught in most schools, teachers can hardly avoid referring to living and non-living, to life and death. I naturally feel anxious that the conclusions I have adverted to should now be submitted to the judgment of the thinkers and careful observers of our time, and I hope if my views should fall under the notice of observers and fellow workers in other parts of the world, particularly in America, Australia, and of microscopists of India and Japan, they will consider my views and publish facts adverse or favourable, as the case may be, but first from the observation side. To go into the general bearing will be premature until the question of Vitality is affirmatively answered, or again has to be dismissed as unscientific or impossible.

To the Editors of THE LANCET I feel greatly indebted for allowing me to bring these views before my brother practitioners and I hope that the following summary may be brought under the notice of readers likely to be interested by the editors of other journals.

A reprint will shortly be published by Messrs. J. & A. Churchill, 7, New Burlington-street.

CONCLUSION.

In conclusion, then, I shall venture to repeat that as far as I am able to judge the evidence to be adduced at this time in support of the view of the absolute separation of living from non-living matter is conclusive. The gulf between them has not been bridged or filled up and there is no sound reason for thinking that it will not for ever remain as wide and as deep as it is.

So, too, from life to death the change is absolute as regards any actual living particle. It seems to me there is no gradual or progressing change. Matter is either living or not living. It does not gradually pass from one state into the other. There is no half-life or half-death in the case of a definite particle or portion of bioplasm.

The exact seat of the operation of vitality—the exact matter which possesses vital power—has been determined

[2] Die Structur der einfachen Gewebe des Menschlichen Körpers. Translated by Professor Victor Carus. Leipzig, 1862.

[3] The Unseen Universe, Sir Robert Ball, LL.D., F.R.S., Cambridge, England. The Monist, vol. vi, No. 4, July, 1896. Chicago: Open Court Publishing Company.

and pointed out in various living forms differing widely from one another. In what respects the matter which is the temporary seat of vital action—the bioplasm, which may undergo conversion into tissues and various other formed matters—absolutely differs from these as well as from products resulting from metabolic change has also been indicated.

The structural peculiarities of all tissues and the properties and chemical composition of many formed matters produced in living organisms I attribute to vitality. Further, the evidence which has convinced me that this vitality actually overcomes, but in some way we do not understand, the ordinary forces and properties of certain kinds of non-living matter is in my opinion conclusive. Certainly parts of a particle of living matter are during life placed, or place themselves, above other portions—in fact, over, under, or on either side, and, indeed, in any position, with equal facility. The matter may move in any direction and portions may move *into* and mingle with one another.

As far as can be ascertained Vital Power, Vitality, Biokraft, can only be conferred upon matter in one way by vital power always derived from already existing living matter.

Associated with vital movement and the other usual but inexplicable endowments of living matter we must not forget that in particular instances we have in addition the evolution of heat, light, and electricity, and perhaps other forms of energy,—but how the conversion of energy is effected by the bioplasm is still a mystery. It is difficult to see how, by denominating a specimen of soft, moist, structureless, colourless substance, a molecular mechanism or machine, or by speaking of it as an apparatus or a physical or chemical laboratory, anyone can help us to discover a solution of the mystery.

Every kind of living matter in nature, whatever may be the results or consequences of its living, whatever may be the characters, state, or properties of the particular particles to which vital power is about to be communicated, the matter in question is always associated with a very large proportion of water, and probably in all cases the matter about to live is actually dissolved before any vital change occurs.

Bioplasm is invariably devoid of form, colour, structure, at the moment of its production—characters which in all things living have been brought about by the influence of Vitality. In fact, colour, form, and structure are not manifest until all vital power has ceased to influence the matter. The results as regards these qualities vary according to the special powers with which the living matter was endowed and these were all derived from pre-existing living matter.

This *vital power*, this *vitality* in which I have been led to believe, exists in connexion with every form of living matter, it never undergoes conversion into any form of energy or, as far as can be ascertained, into anything else. It may cease at any moment and if it governs the changes which indicate that it is a transformer of energy, certainly so far, science has failed to establish even a probability that vitality itself can be transformed in any definite way. *Vitality* may direct, govern, rearrange, determine the movements of atoms or particles of matter. It has not been proved that vitality can act even through the least distance or in any way affect or influence particles to be made to live, separated from those that live by the very slightest interval. Matter to be made living must be infinitely near or perhaps must pass into the very substance of matter which already lives.

The very existence of vital power has been affirmed, denied, and re-affirmed over and over again, but a correct estimate of conclusions advanced by different investigators in the pre-Victorian age can hardly now be formed because in those days the means of examination of the various tissues and of the living matter by high magnifying powers was not possible. The general nature and origin of living matter had not been investigated—in fact, only during the last few decades have we been able to study the movements of various forms of bioplasm and trace the formation of tissues through the several stages of their development with the aid of high magnifying powers and much improved methods of preparation.

The beginning of the world of life—*our world of life*—was surely a very different beginning—a beginning of a nature, order, or kind different indeed from the beginning of any material world—of any lifeless cosmos—of the universe; and could not have occurred until immeasurable periods of varying conditions of matter all absolutely destitute of life had passed.

It is surely impossible to believe now that life of any kind was either an accident, a necessity, or a certain and necessary consequence of any material forces, actions, or influences which preceded its appearance; or that the first indications of the presence of life upon the earth could have been occasioned by any ordinary changes in matter or its properties, no matter how many æons may be allowed for the "working hypothesis" of creation. There seems no adequate reason for suggesting that some special or exceptional state or condition of the surface of our earth or its waters that preceded gradually led to the evolution of life and living nature, from non-life. Gradational or very pronounced divergencies from, or approximations towards, particular types, as may be suggested in certain cases, seem to have been transitory and in some instances to have disappeared. No reasonable explanation of the early changes or of the advent of contemporary forms differing widely from one another in structure and in vital powers seems yet to have been arrived at.

I earnestly appeal to all interested in this comprehensive and most important question, and beg them to consider whether the evidence adduced in favour of vitality is not justified by the facts and arguments brought forward—evidence of a wide and general character, as well as evidence derived from minute investigations in many organisms, general microscope evidence, and evidence from demonstration with the aid of very high powers of specimens from all kinds of tissues and organs.

All interested in the advance of natural knowledge will desire for instance that questions bearing upon the nature of nerve action and mind should be carefully considered from all sides, and that facts and arguments for and against given views should be thoroughly examined and sifted. Of these not a few have been accumulating during the last half century.

Must we not admit the constant operation in all living matter, bioplasm, of a power absolutely different from all forces, properties, energies, activities, principles that are known to belong to any form of non-living matter? I beg to challenge those who take the contrary view and meet this question of vitality with a direct negative to plainly state the grounds of their objection, and to explain how according to their views life facts, movements, origin, growth, production of structure—in short, how life and death are to be accounted for.

I hold that there is no evidence in favour of the doctrine that by the science of the future this vital power, this vitality, will be proved to have sprung from, or to have been in any way at any time connected with, to have belonged to or to have emanated from, ordinary matter, or the opinion that it has been communicated to anything non-living through the intervention of matter or agencies of any kind except the actually living.

And I submit that if all life were to cease in any part of our world it could reappear only by the re-importation, the re-introduction, of bioplasm that already lives, and that it is certain that a living thing—a living particle—that has once ceased to live cannot be restored to life. The same living particle once dead does not regain its life, though the substances formed at its death may be taken up by other kinds of living matter and some of their constituents converted into that particular kind of bioplasm.

To this influence of vital power—vitality—biokraft must, in my judgment, be referred the millions of forms, structures, and actions which characterise the living world and enable us to identify and name each different organism that now lives or that has lived in past time of which any imperishable remains have been discovered. Ever since vitality was first conferred upon certain kinds of matter there is reason to believe that vital action has proceeded upon precisely the same lines as obtain in our living world of to-day.

I cannot suppose a minute particle of living matter which does not consist of particles still more minute. In each particle there seems to be a general movement proceeding in a direction *from* centres. The new substances introduced acquire the living state in these centres. In consequence of the vital movements *from* centre, *centrifugal*,—currents of fluid holding in solution nutrient matters are produced in the opposite direction—*centripetal*. Here, where no eye has yet penetrated, the non-living becomes living, possibly according to the operation of some vital laws, but somehow independently of, and removed from, the operation or influence of laws physical and chemical.

According to law an apple fell, but are we never to be

permitted to consider and inquire how the scaffold rose before the fall, and to remember that in their fall dying and dead apples drag with them to the ground many a new vitality from which stems and leaves, and flowers innumerable, and bounteous fruit, may spring and grow in all their glory, to benefit and delight the thinkers and workers of another age, who will think over and learn ever more and more about the life and growth and death of living things which may then be alive, as well as of those that lived and died in the ages long ago?

I claim, then, for all living nature a position of its own, apart from all non-living and maintain that this conclusion is proved by facts of actual observation, and is in accordance with reason. In short, I claim upon rational and scientific grounds for *Life*, for *Vitality* as manifested by all living nature, the whole living world, by everything that lives and that has lived,—absolute distinction from all non-living, on account of differences in essential nature, differences as regards the principles of *origin*, *multiplication*, *growth* and *action*, and in the manner in which life is influenced by external circumstances. So far from obeying laws by which the material universe is governed, Vitality seems to overcome, during the time of its operation, the influence of physical law. The laws of the living world, if laws there be, belong to an order or category different and apart from that in which physical law is included. The laws of matter and energy are not the laws of life. While matter lives the ordinary properties of the matter seem to be in abeyance and cannot be made evident. Can it be said of any form of vital power that it is indestructible like matter and energy?

From the first moment of existence of an individual organism, as an exceedingly minute living germ, to the production and death of the millions of bioplasts in descent from it, life might easily have ceased at any stage, at any moment, never to return. I claim for *Biology, the Science of Life*, its rightful place among the natural sciences, and a place in natural knowledge equal to that accorded to physiology, natural history, zoology, botany, though biology comes last in time. And for *Bios, Life, Vitality, Biokraft*, a place as far above all cosmic matter, its forces and properties, as the imprints of living things and thoughts we alone can understand, are above the passive stuff we make and mould and fashion as we design and will.

Do not even machines, appliances, structures, arrangements, and all the works we plan and make and cause to work, as well as the wonderful records of the past left by man and only to be read by his descendants, infinitely transcend the limits within which all forms and states of cosmic matter, with its energies, activities, properties, potentialities, physical and chemical phenomena, laws and orders, are, have been, and must ever be confined?

My earnest belief is that the evidence I have adduced in proof of the view that all life and living things are, and have ever been, absolutely marked off from all non-living is convincing and incontrovertible. There is, however, very much more to be said concerning this great problem, particularly as regards the wide general bearing and application of my views on the nature of vitality. But how far and for how long existing scientific authority and our reviewers who rule us all—and with a rod of iron—will permit me to go on I cannot tell.

Ὁ Βίος Βραχύς.

THE VALUE OF OXYGEN IN POISONING BY MORPHINE.

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THE following case of morphine poisoning cannot, I think, fail to be of much interest on account of the almost miraculous recovery the patient made after an enormous dose of the toxin and when death seemed certainly inevitable. Before entering into the details of the case I wish to say that if it had not been for the most kind, able, and energetic coöperation of my partner Dr. Scott and my friends Dr. Chatterton and Dr. Ilott the treatment could not have been carried out to its satisfactory termination. To them my sincere thanks are due.

The patient was a woman, aged thirty-seven years, healthy and of excellent physique. Her early breakfast was brought to her in bed as usual at 7.15 one morning this summer. She then appeared to be perfectly well and spoke cheerfully to the maid who attended on her. About 9.45 A.M. she was observed to be sleeping soundly and at 10.30 A.M. a friend finding her still asleep mentioned the circumstance to the lady of the house, who at once went to see why her guest had not risen. The appearances the latter presented immediately roused her suspicion that there was something wrong and she promptly summoned Dr. Scott, who happened to be not far off. On his arrival at 10.40 A.M. he at once diagnosed opium poisoning and on search being made it was discovered that a bottle in one of her toilet-table drawers—known to have held over two-thirds of an ounce of injectio morphinæ hypodermica, British Pharmacopœia 1885, thus containing over 30 grains of morphine acetate—was empty. The following were the appearances noted by Dr. Scott when he first saw the patient. She was lying on her back in a comatose state from which it was impossible to rouse her, although the interrupted current when applied to certain parts caused some slight muscular contraction and the conjunctival reflex was not absolutely lost. The face was livid almost to complete greyness and the fingers were ashy-grey as far as the second joints. The pupils were contracted and did not react to light, but neither then nor afterwards were they strikingly small or "pin-point." The breathing was very slow and shallow, not stertorous. The pulse was slow and fairly strong and muscular relaxation was complete. This condition very quickly passed into the most profound coma and the pulse rapidly got weaker. Steps towards resuscitation were immediately taken. While an œsophageal tube was got ready ether was hypodermically injected and the faradaic current was applied. With the assistance of Dr. Chatterton and Dr. Ilott, who had been sent for, the tube was passed into the stomach and that organ was thoroughly washed out first with water and then with a solution of permanganate of potash, a pint of strong coffee with 1 oz. of brandy being afterwards introduced. Before this had been completed faradaism was discontinued as it had failed to elicit any response. It was noticed that while the stomach was being washed out the breathing deepened and the colour became less livid, but soon after the completion of this operation the lividity returned and the breathing became more and more shallow and slow till it finally ceased altogether at 11.30 A.M. Two hypodermic injections of atropine with $\frac{1}{70}$th of a grain of strychnine had already been given and these were followed at intervals by two others of $\frac{1}{70}$th of a grain of atropine. A cylinder of oxygen had been sent for. Cyanosis was now intense and the pulse was exceedingly feeble. Artificial respiration, which had been begun, produced little or no alteration of colour or pulse. At 12.30 P.M. an enema of strong coffee and brandy was given and mustard was applied over the cardiac region and to the feet. Artificial respiration was steadily persevered with and at about 12.45 P.M. the inhalation of oxygen was commenced. In a very short time this rendered the cyanosis much less marked and distinctly strengthened the pulse. At 2.40 P.M. an enema of hot bovril was given. At 3.20 P.M. the condition was unaltered save that the pupils were widely dilated. There was still no indication of natural breathing. Another $\frac{1}{70}$th of a grain of strychnine was now injected and frequent injections of ether were kept up. At 4.20 P.M. 1 oz. of brandy was passed into the stomach. At 5 P.M. the patient's condition seemed utterly hopeless. There had been no sign of natural breathing for about five and a half hours, the pulse was getting much weaker and the cyanosis became intense if the oxygen were stopped. Some improvement, however, set in shortly after this and at about 6 P.M. the patient began to make an occasional slight inspiratory effort—about one exceedingly feeble gasp per minute—and the colour became lighter. At 7 P.M., however, the end again seemed to have come and we expected death to occur at any moment. Still the pulse could be detected and the treatment was uninterruptedly carried on. Half an hour later (at 7.30 P.M.) indications of respiration of Cheyne-Stokes character began to show themselves at intervals and the colour had much improved. At 8.10 P.M., very slow, shallow breathing having commenced, artificial respiration was stopped for twenty-five minutes, oxygen still being continued. At 8.35 P.M. natural breathing again threatened to

cease and for five minutes artificial respiration was resorted to, a period of twenty-eight minutes of natural breathing following, at about 12 per minute. Again this ceased and artificial respiration was resumed for twenty minutes. At 9.50 P.M. natural breathing seemed tolerably established, though it was still of the Cheyne-Stokes type. The colour for the last hour or more had been decidedly improving, there being now distinct redness of the lips and cheeks. Application of the interrupted current at this period caused very considerable muscular contraction. At 10 P.M. the oxygen was stopped. The pupils were not so dilated and reacted slightly to light. At 10.15 P.M., the pulse again failing and lividity returning, oxygen was given for five minutes, the colour and pulse promptly improving. At 10.40 P.M., to our astonishment, she opened her eyes and spoke in answer to questions and at 10.50 P.M. she swallowed some black coffee. For two hours after this she could not be got to speak again, though on faradaisation she roused herself, moved her position in bed and looked about her, her colour and pulse keeping good. At 1 A.M. she again answered when spoken to and from that time to 3 A.M., when we left her in charge of two nurses, she was conscious though dazed and drowsy. Shortly after 9 A.M. I again saw her and found her sitting up in bed and enjoying a breakfast of coffee, bread and butter and complaining of nothing save a bruised feeling about the chest and arms, doubtless due to our efforts in keeping up artificial respiration so long.

Among the remedies given a trial in the earlier part of the day were ammonia and amyl nitrite, but these seemed as useless as the others employed. Nothing but oxygen was apparently of any value. During the whole time good bodily heat was maintained and there was little or no diaphoresis and no vomiting occurred.

Cases of recovery after a larger dose than 30 gr. of a morphine salt have been reported. I am unable, however, to find more than the mere statement of this fact and I am unaware in any such instance how long the poison had been taken before treatment was commenced. A recovery such as in the present case, when so large a quantity was taken on an empty stomach, the patient's condition remaining undiscovered till more than three hours afterwards, must be exceedingly rare. My object in reporting the case is to add my experience of the immense therapeutic value of oxygen in opium or morphine poisoning to that of those who have already advocated its use, and to urge its employment in such cases. Most certainly without its aid my patient would have died. In THE LANCET of June 2nd, 1894, Dr. W. J. C. Merry noted a case where it proved of great value after 2 oz. of chlorodyne (containing probably about 8 gr. of morphine) had been taken, and Dr. C. J. Macalister in THE LANCET of Dec. 7th, 1895, details another instance where it was found of much service after eight pills, each containing ¼ gr. of morphine, had been swallowed.

Fortunately for my patient supplies of the gas were able to be obtained without much delay. Artificial respiration by Silvester's method without oxygen quite failed to remove the intense cyanosis or to strengthen the pulse. The gas was administered by passing into the mouth a vulcanite nozzle attached to a tube leading from the cylinder, an india-rubber regulating bag intervening. At each inspiratory movement a stream of gas was allowed to flow, the tube being pinched close during the expiratory movement. This was kept up with the exception of the two intervals of natural breathing I have mentioned for about nine and a half hours. Altogether about 80 cubic feet of oxygen were used. During the very short intervals when the supply was stopped on account of a change of cylinder or when the œsophageal tube was passed the lividity rapidly deepened and the pulse as rapidly got weaker. In about half a minute after resuming the oxygen marked improvement took place as regards colour and strength of pulse.

I am much inclined to agree with the idea that oxygen not only acts as a heart stimulant but possesses some direct oxidizing effect on the poison. Considering the amount of morphine swallowed, the comparatively short time (ten hours) that elapsed between the commencement of the inhalation and restoration to semi-consciousness seems to me to indicate that some chemical change must have taken place by which much of the activity of the poison which had been absorbed had been destroyed.

In conclusion, I may say that my patient has never been addicted to the misuse of drugs and has never required to take any form of narcotic on any occasion.

THE ACTION OF THYROID AND PARATHYROID EXTRACTS UPON METABOLISM IN THE INSANE.[1]

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DURING the past two years the experimental work more particularly of Vassale and Generali in Italy, of Gley in France, of Blumreich and Jacoby in Germany, and of Welsh in this country, has drawn attention to the probable importance of the parathyroid bodies in the economy. Until recently most of us believed that removal of the thyroid gland is followed by characteristic symptoms, although even amongst the thyroidectomists there are some (e.g., H. Munk) who attribute the effects produced not to the removal of the gland substance but to an interference with adjacent nerve structures in the neck involved by the operation. More recently, however, the parathyroidectomists have appeared on the field, and although they are still a divided camp some of them (e.g., Blumreich and Jacoby) holding that one and all of the parathyroids may be removed without ill effects, the majority of them maintain that their experiments favour the view that the time-honoured acute effects of thyroidectomy are to be attributed to the removal of the parathyroids alone. The experimental removal of the thyroid and parathyroids has thus led to very conflicting views, and the work of the more recent parathyroidectomists would suggest that the parathyroids are physiologically more important than the thyroid and that possibly the activities of thyroid preparations might be due to an admixture of parathyroid. It therefore occurred to me that light might be thrown upon the matter from the pharmacological side by the administration of parathyroid extracts, which, so far as I am aware, have not previously been exhibited in the human subject. One would thus be able to compare the effects produced with those which occur during thyroid administration. Within the limits of this paper it will only be possible to consider the pharmacology of the thyroid and parathyroids; their therapeutics will not be referred to.

The patients to whom these extracts were administered were women suffering from insanity, either chronic and incurable or threatening to become so. Each patient was weighed, kept at rest in bed, and put upon a fixed mixed diet sufficient to maintain the body-weight and body temperature. By rest in bed one controlled more particularly non-nitrogenous metabolism and the excretion of carbonic acid and water. By maintaining a "fixed mixed diet" one controlled more particularly nitrogenous metabolism and the excretion of urea. We know that the food necessary for the life and work of the body must contain in suitable quantities proteids, carbohydrates, fats, salts and water; that the water and salts are largely eliminated unchanged, that the fats and carbohydrates are completely oxidised and escape as carbonic acid and water, and that the proteids, which alone enter into the formation of the living tissue or bioplasm of the body, are incompletely oxidised, two-thirds of every proteid molecule being excreted as carbonic acid, water, phosphate, and sulphate, and one-third escaping as urea. It is thus possible to gauge the metabolism of the body by controlling its food and work and by observing its elimination of water, carbonic acid, urea, and other metabolic products. When a patient is kept at rest in bed and upon a fixed mixed diet, metabolism "strikes a balance" which it is possible to upset by the introduction of drugs into the system. In the course of a few days, by which time the patient's metabolism under the conditions of rest and diet had become stable, a careful note was made of the state of the various bodily functions and organs, including investigations of the pulse, blood, and urine, and the drug was then commenced. During its administration periodical examinations were made as before. The drug was stopped in due course and a few days later the examinations were repeated for the last time, the patient was weighed, and finally she was allowed to be up and about and to return to ordinary diet and modes of living.

[1] A paper read before the Section of Psychology at the meeting of the British Medical Association at Edinburgh, July, 1898.

PARATHYROID EXTRACT.

The parathyroids of the ox were selected, this being the most convenient animal from which to obtain a sufficient supply of these small bodies. Dr. Welsh of Edinburgh, who has recently given an excellent account of the anatomy of the parathyroids in man and of the effects of their removal in cats, was kind enough in the first instance to make me familiar with their appearance in the ox. In order to avoid any risk of removing thyroid tissue along with the parathyroids I employed only the external parathyroids, these being anatomically separate from the thyroid and not, like the internal bodies, incorporated with the larger gland. The external parathyroids of the ox lie one on each side just under cover of the free dorsal borders of the lateral lobes of the thyroid opposite about the lower level of the isthmus. They occupy the stratum of fat which separates the thyroid lobe ventrally from the pharynx-œsophagus dorsally. Not infrequently they are blended with islets of thymus tissue. They are usually somewhat flattened and pyriform, the sharp end, directed towards the middle line, being continuous with a stalk or pedicle which contains the blood-vessels and penetrates the deep surface of the thyroid. They measure from ¼ in. to ½ in. in length and weigh from ¼ gr. to 1 gr. They have a smooth surface and a reddish-brown colour, and their cut surface is relatively dry and lacks the juicy appearance of freshly-cut thyroid tissue. Microscopically they consist of closely-packed groups or columns of cubical epithelial cells, with a delicate intervening stroma, and in places there is an appearance of a lumen in which there is sometimes colloid-like material. The parathyroids of the ox, like those in man, may thus exhibit what Welsh describes as the more highly specialised types of structure. The chemistry of the parathyroids is unknown.

In my first case of parathyroid treatment I commenced the drug on the fifth day of rest in bed with fixed diet. In the first instance the fresh glands were dried for twenty-four hours in a sulphuric acid chamber and administered by the mouth. In this way 1 dried gland was given by the mouth every morning for a week (fifth to eleventh days), 2 dried glands were given on the twelfth and thirteenth days, and 3 on the fourteenth day. No effects were observable. On the fifteenth and again on the sixteenth day 3 glands, dissected the same morning, were administered straight away in the fresh state by the mouth but without any apparent change in temperature, pulse, respirations, urine, or in metabolism generally. As mouth administration gave negative results, hypodermic injections were tried after an interval of three days (seventeenth to twenty-first). Extracts in glycerine were used and in this form 1 gland was given on the twenty-second day, 2 were given on the twenty-third and twenty-fourth days, and 3 on the twenty-fifth day. During the treatment by subcutaneous injections of glycerine extracts the patient was kept under careful observation, the temperature being taken every hour day and night. The only changes noticed were (1) a slight diminution in the red blood corpuscles; this quite probably was due to the interference with the patient's sleep involved by the taking of the temperature; (2) a slight increase in the predicrotic wave of the pulse-curve. A rise in pulse-tension, however, has been frequently observed to follow the subcutaneous injection of other animal extracts, so that one was not justified in inferring that this was a specific action of parathyroid extract. In my second case extracts were made in glycerine, in sulphuric ether, and in 10 per cent. sodium chloride solution. They were injected subcutaneously, the doses in the case of each extract being equivalent to from one to four fresh glands. The results were again negative, though the treatment was persisted in for seven weeks. In this case the glycerine extracts produced no diminution of red blood corpuscles, the ethereal extracts produced a transient quickening of the pulse apparently due to the ether, and the saline extracts produced no effect at all. In a third case glycerine extracts were given hypodermically, containing in each daily dose as much as nine fresh glands—that is, more parathyroid than would be found associated with two thyroid glands in the whole animal. No change occurred in temperature, pulse, or respirations; there was no increase in the output of water and carbonic acid; there was no change in the urinary nitrogen and phosphoric acid (which were estimated daily); and, in short, the patient exhibited none of the constitutional effects of thyroid feeding, but, on the contrary, she actually gained 2lb. in weight during the treatment. After a few days' interval she received thyroid treatment by the stomach in doses equivalent to one fresh thyroid daily and she at once exhibited the effects of the drug in a marked degree and lost 10lb. in weight in a week. This case proves conclusively that in a patient actively susceptible to thyroid, parathyroid, even in relatively larger doses, produces no effects comparable to those which occur during thyroid administration. And indeed, in my hands the external parathyroids of the ox when administered to the human subject, whether in the solid state (dry or fresh) by the mouth or in the form of glycerine, ethereal, or saline injections under the skin, seem to produce no effects at all except a slight increase in pulse-tension in common with various other organic extracts.

THYROID EXTRACT.

It is now established that the essential active principle of the thyroid gland is Roos and Baumann's thyroidin, which seems to be identical with the active constituent of R. Hutchison's colloid powder ("thyrocol"). I have been unable to obtain pure thyroidin for therapeutical purposes, but in 10 cases I have used "thyrocol" and in 85 cases the more familiar thyroid tabloids or dry extract of the gland. The actions of thyrocol I found to be the same as those of the tabloids, and the toxic and undesirable effects upon heart, stomach, and nervous system occurred equally with the one as with the other and are due, in my opinion, to the thyroidin contained in the preparation and not to the accompanying "useless" proteid and extractive matters. The sheep's thyroid contains on an average from 0·2 per cent. to 0·5 per cent. of thyroidin; this means that one gland may be twice as active as another. An average sheep's thyroid yields about 6 gr. (0·4 gramme) of "colloid powder" and about 60 gr. (4 grammes) of "dry extract," or 12 "tabloids." In the majority of the cases I employed, as originally suggested by Dr. Lewis Bruce in his "Thyroid Treatment of Insanity," doses large enough to produce thyroidism. Thyroidism is usually brought about in insane patients by daily doses of 60 gr. (20 gr. three times a day) of the "dry extract" continued for six or seven days; this is equivalent to giving one fresh sheep's thyroid daily for a week. In the case of "thyrocol" I found that daily doses of 15 gr. (5 gr. three times a day) repeated for a week were necessary to produce thyroidism. In some cases larger doses were given—e.g., 18 tabloids a day—and in other cases smaller doses—e.g., 1 tabloid or 3 or 6 tabloids a day. In all the cases the effects produced were the same in kind, but varied in intensity according to the size of the daily dose and the duration of the drug. The body weight was of little account as regards dosage, but the drug was badly tolerated by general paralytic and tuberculous patients, still worse by patients over sixty years of age, and worst of all by fat patients, especially those in whom, as Dr. Byrom Bramwell has pointed out, there was reason to suspect fatty degeneration of the heart.

The outstanding effects in my thyroid cases were as follows:—

1. *Body weight.*—The loss in weight was constant and usually amounted to 7 or 8 lb.—that is, a teaspoonful of dry thyroid extract given daily for a week produced a loss of weight at the rate of 1 lb. a day. This was followed after the drug was stopped by a gain in weight which was not so rapid as the previous loss but frequently exceeded it in amount.

2. *Body temperature.*—Pyrexia was not so constant as the loss in weight, and, indeed, a considerable loss in weight might occur without pyrexia. In 20 per cent. of the cases there was no pyrexia. In 66 per cent. the pyrexia was subfebrile—that is, a rise of from 1° to 2° F. above the previous average temperature of the patient, which in most cases was 1° below normal. Dr. Clouston drew attention thirty years ago to the relatively low temperature in dementia and chronic insanity generally—a fact which probably indicates the sluggishness of metabolism in the chronic insane, especially of their nerve centres. The pyrexia was slightly febrile (a rise of from 2° to 3° F.) in 10 per cent., and moderately febrile (a rise of from 3° to 4° F.) in the remaining 4 per cent. of the cases. Usually the temperature began to rise on the second day of the administration of the drug, gradually reached its maximum, and began to fall again before the drug was stopped.

3. *Integumentary system.*—Perspiration was usually increased, in most cases giving rise to an increased moist feeling of the skin, but in 30 per cent. of the cases being visibly profuse. This means not only that much more water is lost by the body, but also, as Schierbeck has shown, that a considerable quantity of carbonic acid is lost in the sweat; and in addition, after carefully investigating the point,

I am convinced that when the skin breaks into perspiration the urea in the sweat at once increases and no inconsiderable quantity of urea may be eliminated in this way. The skin during thyroidism was flushed from the hyperæmia which usually accompanies sweating; a fine desquamation was not uncommon and very frequently the skin became fresh, clear, and healthy-looking after treatment. The subcutaneous fat was obviously diminished in most cases and, indeed, the combustion of fat during thyroidism is probably the main cause of the loss in weight and the chief source of the increased output of carbonic acid and water.

4. *Locomotory system.*—No clinical changes were exhibited apart from nervous phenomena and an incapacity for physical exertion.

5. *Hæmopoietic system.*—The chief changes noticed in the blood during thyroidism, especially when large doses were used, were a diminution in the hæmoglobin and to a greater extent in the red blood corpuscles. The depreciation in the value or worth of the hæmocytes as regards their hæmoglobin was thus but slight. A slight degree of leucocytosis was not uncommon, and in films stained by Dr. Lovell Gulland's method the blood plates were slightly increased. No obvious changes were detected in the spleen or in the thyroid gland.

6. *Nervous system.*—Sensory symptoms in the form of headaches, pains, tinglings and pricklings in the limbs and body generally were common and usually occurred early. Motor phenomena in the form of tremors of the face, fingers, and limbs also set in early and were accompanied later by weakness and a feeling of great exhaustion. An exaggeration of the tendon reflexes was occasionally seen during the earlier stage of the drug. Some degree of mental excitement was frequently exhibited, varying from quiet talkativeness to noisy scolding, restlessness, and impulsive violence, and later the mental signs were rather those of the irritability of exhaustion. The sleep function was not specially affected except in cases where the sensory disturbances were very pronounced.

7. *Circulatory system.*—Tendencies to palpitation and syncope occurred in a few patients who tolerated the drug badly. The pulse was invariably increased in rate, usually by 40 or 50 beats per minute with large doses. Later the pulse became irregular, weak, and soft and in the majority of cases gave the signal when the drug had to be stopped. The pulse remained fast usually for at least a week afterwards and sometimes for a fortnight or even longer. An acceleration of the heart points to an excessive katabolism of its substance, and the fact that thyroid powerfully promotes the combustion of fat seems to me to explain the risk of cardiac failure in cases of fatty heart under thyroid treatment. There is excessive oxidation and disintegration of the heart-wall. Pulse-tracings showed distinct evidence of diminished tension, the predicrotic wave being diminished and the dicrotic wave increased.

8. *Respiratory system.*—The increase in the respirations during thyroidism was constant and amounted usually to six respirations per minute and not uncommonly to ten. As an increase of even one respiration per minute means 1440 additional respirations in the twenty-four hours, it is obvious that the marked increase in the respirations during thyroid feeding, the patient being at rest in bed, points to a remarkable increase in tissue oxidation and to an exaggerated ingress of oxygen and output of carbonic acid and water.

9. *Alimentary system.*—The thirst was commonly increased and the appetite diminished during thyroidism, but after the treatment the appetite was often prodigious. In about 25 per cent. of the cases the digestion was deranged by the drug, the symptoms being anorexia, furred tongue, nausea, vomiting, and in some cases biliousness and diarrhœa. In my opinion thyroid dyspepsia is due to a local irritation by the active principle of the drug (thyroidin), which, as is well known, is stable enough to resist gastric digestion, and so if supplied in sufficient quantity it will irritate the lining of the stomach, the duodenum, and even the lower bowel. Thyroid dyspepsia is a complication which sometimes necessitates the discontinuance of the drug and it renders observations upon metabolism useless. The action of the bowels was not notably improved by thyroid in my cases, but it will be remembered that amongst insane women constipation is a marked feature and is very intractable. The excretory nitrogen in the fæces was not estimated.

10. *Urino-Generative System.*—Menstruation was frequently more profuse than usual at the regular periods, in a few cases it appeared irregularly during thyroidism, and in one patient, an idiot, aged twenty-one years, with cretinoid features, it appeared for the first time in the patient's life after she had taken one tabloid for three weeks. The urine was carefully investigated, the twenty-four hours' discharge being collected, mixed, and measured and examined fresh the next morning. The daily amount during thyroidism was usually increased, but to some extent it varied inversely with the perspiration. The colour and specific gravity were frequently increased. Turbidity was common. The mucus deposit was not increased as is said to occur in myxœdematous cases under thyroid treatment. The chemical reaction was almost invariably acid but the total acidity was not estimated. Albuminuria was common. Glycosuria was not met with, although sugar was tested for in every case; in all probability the absence of sugar in my cases was due to the fact that the patients were on a fixed diet which did not contain an excess of sugar, for it is the tendency to "alimentary glycosuria" which, according to Bettmann, occurs during thyroid feeding. Uric acid and urates were commonly increased. Bile occurred only in cases in which the digestion was markedly disturbed. The chromogens of indigo-red and urorosein were usually increased. The urine-pigments were not investigated. The total dissolved solids were markedly increased during thyroidism and were estimated in the rough by multiplying the last two figures of the specific gravity by the number of ounces passed in the twenty-four hours. This formula gives the total daily solids in grains. The phosphoric acid was distinctly increased, especially during the earlier stages of the drug; it was estimated by the uranium method. The increase in the phosphoric acid in the urine is probably due mainly to an increased oxidation of the phosphorised constituents or azotised fats—e.g., protagons and lecithins—of the nerve centres. The urinary nitrogen also was much increased, especially in the later stages of thyroidism; it was estimated by the hypobromite method. It must be remembered that the thyroid tabloids consist largely of nucleo-proteids and so are rich in nitrogen and phosphorus, but the amount of proteid supplied in the drug is quite insufficient to account for the increase either of the phosphoric acid or of the nitrogen in the urine.

Conclusions.—The preceding facts show indubitably that thyroid is a profound katabolic stimulant. With the patient at rest in bed and on a fixed mixed diet there is a great increase in all the excreta, especially in the water and carbonic acid and to a less extent in the urea and other products of nitrogeneous metabolism. Thyroid thus greatly accelerates the splitting up and oxidation of the tissues. The fats of the tissues suffer most severely, and the reason is probably simply this—that the fats are the most fluctuating of the tissue substances, they are the most readily formed and the most easily lost of the body stuffs, and consequently when a powerful katabolic stimulant such as thyroid is introduced into the system the fats are the first to be burned up, and when the thyroid becomes eliminated from the system fat is rapidly laid on. Amongst the fats thus affected are probably the so-called "azotised fats," or phosphorised constituents of the central grey matter, and the early excess of phosphoric acid in the urine is probably derived from this source. The tissue carbohydrates are probably also considerably oxidised, and, although the clinical proof of this is not so clear, the great muscular weakness and incapacity for physical exertion during thyroidism may indicate that the glycogen in the muscles, which is the chief immediate source of muscular energy, has been largely burnt up and so is not available. The tissue proteids are also excessively wasted, the "unorganised" proteid being probably affected first and finally the living proteid or bioplasm itself. After the thyroid is eliminated from the system a gain in weight sets in and there are other evidences of a powerful anabolic reaction. The *rationale* of this change seems to me to be explainable by Hering's theory of the "internal self-adjustment of bioplasm," according to which the bioplasm, when it is being katabolised by some stimulus (e.g., thyroid) tends less and less towards katabolism and more and more towards anabolism which sets in with a rebound as soon as the katabolic stimulus is removed.

As to the channels by which the thyroid reaches the tissues, the changes in the blood during thyroidism probably indicate that the drug is distributed by the blood to the tissues, but at the same time the early occurrence of the sensory motor and mental phenomena during thyroidism, the evidences of hyper-activity of the central grey matter followed by the signs of its exhaustion, and the early increase of the

phosphoric acid in the urine, all seem to me to indicate that the thyroid specifically stimulates the central nervous system and through it the metabolism of the tissues. In direct support of this view I may mention that I fed two rats upon porridge and water but to one of them was also given daily one thyroid tabloid. The thyroidised rat died with tremors and other nervous symptoms on the fourth day, and while the brain cells of the healthy rat were normal in appearance those of the thyroidised rat showed distinct chromatolysis, many of the cells being "ghost-like."

And, finally, a word in explanation of the conflicting results of the removal of the thyroid and parathyroids. There seems to be a strong similarity between the "tetanic" symptoms which follow parathyroidectomy, the acute "neurotic" symptoms which follow thyroidectomy, and the toxic phenomena of thyroidism. It would seem to me that the essential result of thyroidectomy is an artificial myxœdema (Horsley's "mucinoid" and "marasmic" stages), and that the acute or "neurotic" effects of thyroidectomy are accidental and, like the symptoms of parathyroidectomy, may be accounted for (1) by the youth of the animal operated upon—the "acute" symptoms are always most common in young animals and are usually absent in old animals; (2) the interference with the rich nervous connexions of the thyroid during the operation; and (3) the wounding of the thyroid, in consequence of which colloid is spilt and thyroidism is produced by absorption of the juice. Where surgeons meet with this mishap it is common for them to have a more than usually distinct febrile reaction and tetanic symptoms after the operation. In the removal of the internal parathyroids, which are usually incorporated in the deep surface of the thyroid, the thyroid cannot escape severe manipulation or even actual wounding.

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Edinburgh.

CARIES OF THE SPINE: MODERN METHODS OF TREATMENT.

By NOBLE SMITH, F.R.C.S. Edin., L.R.C.P. Lond.,

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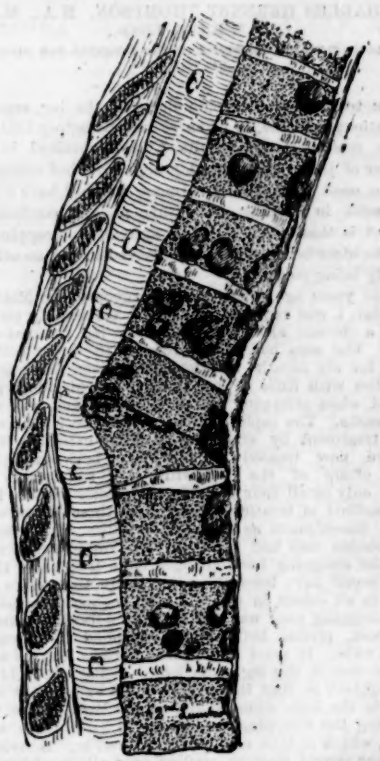
DURING recent years this disease seems to have been selected by surgeons for experimental and violent methods of treatment. The excitement produced among the public by the circulation in the lay press throughout the world of M. Calot's revival of "forced reduction of the deformity" has scarcely subsided when it is proposed that every case of caries should be operated upon with the view of removing the tuberculous bone. This suggested operation is based apparently upon the following assertions—firstly, that sufficiently good results cannot be obtained by other methods, and secondly, that it is desirable to remove every portion of diseased bone in tuberculous osteitis. I will endeavour to controvert both these contentions. First, if the spine be fixed thoroughly by means of an efficient apparatus such as I have frequently described, and gradually or rapidly extended in accordance with the comfort of the patient, the adjustments being made with careful accuracy by the surgeon himself and the health of the patient maintained by proper food and medicine, almost every case of caries of the spine will be cured. Operations are undoubtedly called for in a considerable number of cases and occasionally it may be desirable or necessary to cut down upon diseased parts and remove pieces of necrosed bone or give vent to the contents of a chronic abscess. Should an abscess appear it is desirable to open it up as soon as possible and to scrape it out and, in fact, to adopt the methods of modern surgery in the treatment of chronic abscesses as far as possible. If this plan of treatment be carried out it may be confidently expected that every patient whose health has not been already undermined by the disease, or, in other words, every patient who has not become the subject of general tuberculosis, will be cured. In no case where I have been able to carry out this treatment thoroughly has there been any increase in the deformity after the treatment has been commenced and in the large majority the deformity has been reduced. The experience of such results gives me reason for dissenting from the assertion that other methods than that of extended operation have not been successful. Secondly, with regard to the removal of the tuberculous bone it has not yet been proved that we can define with certainty the exact area to which the disease is limited, and even if we could define this area the operation would not prevent further occurrence of disease in other parts after we had removed that which existed. It is only necessary to examine pathological specimens of spines affected with this disease to realise the almost insuperable difficulty of removing even that portion of the bone which is obviously diseased, and as to taking away every part which may be involved the accomplishment is practically impossible.

The annexed illustration shows a specimen in St. Bartholomew's Hospital, No. 1064. It consists of a vertical



Section of spinal column from fifth dorsal to second lumbar vertebra inclusive. Destruction of part of the bodies of the tenth and eleventh dorsal vertebræ has taken place and the bodies of the other vertebræ are seen studded with tuberculous cavities.

section of a portion of the spine, including the fifth dorsal to the second lumbar vertebra. Between the tenth and eleventh dorsal vertebræ there is destruction of bone

leading to angular deformity, but in other parts of all the vertebræ shown, hollow spaces, more or less cup-shaped, exist. This is doubtless an exceptional specimen, but even when there is far less implication of the bones the removal of the diseased parts may still be unattainable.

In dealing with tuberculous disease we have to conduct a contest between the nutrition of the patient and the disease, and it is of the first importance to render the soil unfit for the tubercle bacilli. Improvement in the patient's vitality will overcome the bacilli and perfect fixation will permit local repair to take place. This is surely a well-established doctrine and it has been proved to be true in practice. There can, of course, be no doubt, speaking generally, that in cases of degenerated and broken-down tuberculous bone the sooner and more completely it is removed the better. In caries of the spine this can be effected by the early opening of abscesses and their treatment as above referred to, and sometimes by more extensive operations for removal of bone, but to cut down upon every diseased spine and attempt to remove all affected osseous tissue is a plan of treatment which can hardly commend itself to cautious surgeons. Further, to remove the laminæ and pedicles for the purpose of approaching the diseased parts is to remove those portions of the vertebræ which are, as a rule, alone free from disease and upon which we should rely for maintaining the stability of the spinal column during the process of repair.

Queen Anne-street, W.

THE TREATMENT OF CHRONIC ULCER OF THE LEG.

BY CHARLES HERBERT THOMPSON, M.A., M.D. DUB., M.R.C.P. LOND.,

LATE CLINICAL ASSISTANT TO THE HOSPITAL FOR DISEASES OF THE SKIN.

THE treatment of chronic ulcers of the leg, especially in out-patient practice, is often so unsatisfactory that it seems worth recording the results I have obtained in a large number of these cases by adopting an old but comparatively seldom used method of treatment which I have found very successful in dealing with this painful condition. The method is that of careful and systematic strapping of the leg, the ulcer being completely covered in and no other local remedy being employed.

Some years ago, when house surgeon to the Metropolitan Hospital, I was requested by one of the visiting surgeons to strap a chronic ulcer on a patient's leg situated over the tibia. The man had been attending the out-patient department for six months and had been given the usual routine remedies with little or no benefit, but his ulcer soon improved when strapping was commenced and was well in a few weeks. The rapid healing of this ulcer induced me to give treatment by strapping a more extensive trial and I have now treated in this way between thirty and forty ulcers of the leg with very satisfactory results. I can only recall four patients, all elderly women, in whom this method of treatment failed. In these instances it had to be discontinued as it caused irritation of the leg, but it is probable that had these patients rested sufficiently and had the strapping been changed more frequently the treatment would have been as successful in their cases as it has been in all others in which I have regularly carried it out. The strapping used was the ordinary adhesive plaster spread on stout, pliable holland and supplied in 12-yard rolls, 16 in. wide. It must be cut into various lengths according to the size of the leg, each length being about 1¼ in. wide and applied so that the strips overlap by ¼ in. It is best to include the foot, commencing at the base of the toes and carrying the strapping up the leg to 3 in. or 4 in. above the ulcer, which is thus completely covered in. A strong calico bandage should then be applied over all, reaching from the toes to the knee, and this should be changed by the patient daily or as often as it becomes soiled.

Occasionally small vesicles and excoriations form beneath the strapping or the skin round the ulcer may become irritated by retained discharge. This is less likely to occur if the patient can rest, and is not of much importance, as the excoriations readily heal on the application of an ointment composed of equal parts of zinc ointment and soft paraffin, applied on small pieces of lint, the whole being then covered in with strapping. Care should be taken that the lint is not placed too close to the ulcer, as otherwise it may interfere with the firm pressure which should be maintained by the strapping on the healing edges. It is usually sufficient to change the dressing twice a week, but if the ulcer is large and there is much discharge it may be necessary at first to renew it more frequently and if there is much inflammation of the skin around the ulcer it is well to subdue this before commencing to strap in the first instance.

At the Hospital for Diseases of the Skin, Blackfriars, where many out-patients attend with ulcer of the leg, the surgeon to whom I was acting as assistant kindly allowed me to treat many of his cases with strapping. On referring to my notes of ten of these patients I find that their ages varied between thirty-three and sixty-three years, five of them being over fifty years. Several of the ulcers had an area of about the size of a crown piece, others were smaller. Nearly all had had months of hospital treatment up to the time strapping was commenced, but with little or no improvement, and in some instances the ulcers had latterly been extending. Many of the patients had varicose veins and œdematous legs and they almost invariably expressed themselves as much relieved soon after treatment was begun. The average number of strappings required in each case before healing was completed was twelve. After the ulcer has healed the patient should be directed to wear an elastic stocking or a Martin's rubber bandage. The latter is to be preferred for hospital patients and should be worn over a soft calico bandage which helps to prevent the irritation which sometimes arises when the rubber is immediately in contact with the skin.

The improvement which this treatment leads to is, of course, largely due to the support which the strapping gives to the limb. The pressure causes diminution of the œdema and a more satisfactory condition of the circulation of the leg, and, in consequence, the granulations become vascular and active, the ulcer becomes healthier, and new skin gradually spreads over it from the margin. This method of treatment is no doubt somewhat troublesome and requires more time than can usually be given to individual out-patients, but there is nothing to prevent its being carried out in private practice or by students under careful supervision in hospitals to which schools are attached. There is no special novelty claimed for the method, which has long been a recognised one, but an experience extending over many years in various out-patient departments in London has shown me how comparatively seldom it is tried and I venture to assert that for chronic non-specific ulcers of the leg of moderate size, where the patient is unable to rest, none of the usual methods of treatment yield anything like such satisfactory results as that which I have endeavoured to describe.

London.

A CASE OF OBSTRUCTED PREMATURE LABOUR.

BY W. J. LUBECK, M.R.C.S. ENG., L.R.C.P. LOND., L.S.A., D.P.H. CANTAB.,

RESIDENT MEDICAL OFFICER TO THE TOWER HAMLETS DISPENSARY.

THE following case may probably be of some interest to the readers of THE LANCET.

On August 5th, at 7.30 A.M., I was called to see a woman, a multipara, aged thirty-eight years, who was about seven months pregnant. A certificated midwife who was present told me that the patient had had a fall three days previously and that the "pains" had set in at about 3 P.M. on the previous day and had gradually increased in severity. She added that they were typical labour pains but that they made no impression on the os, which was then of the same size as it had been on the previous night. I found the patient quite exhausted. The head was presenting, the membranes were intact, and the os was abnormally thickened and tough, barely admitting a finger. I ordered 15 gr. of chloral and left. I saw the patient again at about 12 noon—i.e., twenty-one hours after the pains had set in—and I found that the os was almost the same size as it was when I saw her previously. I learned that the patient had slept for a couple of hours and had awakened refreshed only to be soon prostrated with the

pains, which came on with redoubled vigour. I then resorted to artificial dilatation with Champetier de Ribes's bag, and with some difficulty got it into position and retained it for about two hours, at the end of which time I was surprised to find that the os even then only admitted two fingers, and this with difficulty, there being thus hardly any appreciable increase in size. I ruptured the membranes, and, nothing else being at hand, made a couple of slight snips in the cervical tissues with a pair of scissors. I then performed bipolar podalic version and succeeded in bringing down a foot. The tough cervical band grasped the thigh so tightly that the leg in a few minutes became almost black from the obstructed circulation. After about half an hour the cervix showed signs of relaxing and the rest of the body up to the neck followed with difficulty. A further complication now occurred by the after-coming head being extended and much too large to get through the imperfectly dilated os. As it could not be extricated by the ordinary methods, forceps were tried but without avail. I was then preparing for craniotomy, when a strong pain, aided by stronger traction, succeeded at last in expelling the head. A further complication in this interesting case was a prolapse of the anterior vaginal wall containing the partially distended bladder (cystocele). The placenta was expelled soon after but was incomplete, there being numerous small islets of placental tissue wanting. I found it necessary to insert my hand four times to remove portions of the placenta with my fingers and also to introduce a curette—which was done by a colleague—to scrape away the remnants which had escaped the fingers. A hot iodine douche was then given and was ordered to be repeated once a day and a hypodermic injection of ergotin and strychnine administered. Hot-water bottles were placed to the feet and other precautions were taken to counteract the collapse of the patient. She soon rallied and at the time of writing, a week after the delivery, is quite well, not having had any hæmorrhage or offensive discharges whatever.

The interest of the case, to my mind, lies in the following facts: (1) an abnormally tough and thickened cervix; (2) the unsuccessful artificial dilatation; (3) the evidently diseased placenta; (4) the presence of cystocele; and (5) the value of strict antiseptic precautions, for notwithstanding the number of times that the above complications necessarily entailed manual insertion not the slightest indication of sepsis appeared. I used the pellets of perchloride of mercury specially designed for private use.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON AUSCULTATORY FRICTION AS AN ADJUNCT TO AUSCULTATORY PERCUSSION IN ABDOMINAL EXPLORATION.

BY WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND., AND A. C. PEARSON, B.A. CANTAB.

THE method which is briefly described in this note is not new, although it was recently re-discovered in the wards of St. George's Hospital.[1] Professor Bianchi had introduced it in 1894 in connexion with the Biazzi-Bianchi phonendoscope, but it does not appear to have come before the practical notice of the profession in this country. The expectations which had been raised as to its clinical value have not been fully realised; on the other hand, it is capable of so much precision within a limited range of use that it is worthy to be brought more prominently than has hitherto been the case before the notice of clinical workers. The principle and the procedure are analogous to those of auscultatory percussion. Any amplifying stethoscope, such as the phonendoscope, will have an advantage over the common stethoscope, but the latter is quite sufficient for all ordinary purposes. If the finger be drawn lightly over the skin away from the spot where the chest-piece is applied the otherwise inaudible sound will be loudly heard through the stethoscope, but only for a short distance, beyond which it will cease. The edge of the nail or the top end of a pencil or the like will answer the same purpose as the finger. If the chest-piece be applied over a hollow organ, such as the stomach, the intestine, or even the lung, the friction will continue to be perceived for a considerable distance without any diminution until it abruptly ceases to be heard. By repeating the operation in radiating fashion an outline can be drawn of the vanishing points all around, and on testing this it will be found to correspond exactly with the superficial outline of the organ. It was in mapping out a distended colon that the method was re-discovered at St. George's Hospital. No more striking illustration could be obtained of the fine localising power of the method, for in this case the boundary had to be drawn between the distended gut and the distended stomach. No other method can do this with the same definiteness, and the method also stands alone in the ease of its performance and the absence of any disturbance to the patient, whose state may forbid rougher means of examination. The method is applicable to the study of other regions and organs, but upon this we need not enter at present, as further reference will be made to it elsewhere.[2] The practical experience hitherto gained shows that the method is nowhere so successful as in mapping out the distended viscera in the abdomen, provided the abdominal walls themselves be not unduly tense. Excessive tension of the parietes puts a stop to its differentiating power. With this reservation the results are such as to deserve the attention of clinicians.

[1] Dr. Ewart states that to Mr. Pearson belongs the credit of having found out for himself this additional means of determining the boundaries of viscera and of having called attention in the case in which he had first applied it to the fine results which may be obtained by auscultatory friction.—ED. L.

[2] Clinical Journal, July to September, 1898: "On Practical Points in Auscultation and Percussion and in the Physical Examination of the Chest." Lectures to Advanced Students. By Wm. Ewart, M.D., F.R.C.P. Lecture iv.

SARCOMA OF THE SOFT PALATE, &c.

BY JAMES WILSON, M.D.R.U.I., F.R.C.S.ENG.,
SURGEON TO THE HAVERFORDWEST INFIRMARY.

THE following report may be of interest, as it is the subsequent history of a case, reported in THE LANCET,[3] of sub-parotid and retropharyngeal sarcoma successfully operated on.

It was noticed in January, 1897, that the growth had recurred and occupied the soft palate, invading the right pillars of the fauces, rendering swallowing painful and difficult, and causing considerable dyspnœa. It also involved the right side of the hard palate, especially the alveolar edge. The main central growth was of the size of a small hen's egg, but the edges were ill defined, though several little outlying lobules could be felt. After consultation with Mr. Jacobson it was decided to operate, and on Feb. 12th I, with the assistance of Dr. Stamper, Mr. Williams, and Mr. Mills, removed the growth. Chloroform was given and a preliminary laryngotomy was performed, the pharynx being plugged. Shortly after the patient became livid and apparent respiration ceased, the pulse remaining fair. On lowering the head and rubbing the epigastrium and performing artificial respiration for about five minutes colour returned and natural breathing began again. An incision was then made along the right side of the nose, round the ala, and through the middle of the lip; this flap was rapidly dissected from the bone and bleeding was stopped by pressure and torsion. The hard palate was sawn through in the middle line after removing the right incisors, and the upper jaw was cut through transversely just below the level of the nasal bones. The separated bone was then drawn forward and an attempt was made to separate the growth. To deal with it properly, however, the right cheek had to be slit back to the masseter and much trouble was experienced in getting it all away. The soft palate was removed on both sides and the buccal mucous membrane was dissected off from the masseter, leaving its fibres bare and glistening; all the soft parts were removed as thoroughly as possible. Hæmorrhage was stopped by Pacquelin's cautery and iodoform was dusted over the surface; the skin incisions were brought together by silver wire. The

[3] THE LANCET, June 27th, 1891, p. 1429.

laryngotomy tube was removed before the patient regained consciousness. The temperature, which never rose above 101° F., became normal in three weeks. Four weeks after the operation the patient had a severe fall downstairs, resulting in partial paraplegia, which lasted seven weeks. This all ultimately cleared up. At present there is no evidence of recurrence, the only complaint being some stiffness of the jaw. Sections were taken of the main tumour and a neighbouring gland removed during the operation. Both resembled the original growth—"mixed glandular sarcoma resembling in structure the parotid gland"—with the addition of larger patches of chondrification than one usually gets in such growths.

Haverfordwest.

PYÆMIA DUE TO ALVEOLAR ABSCESS.

By JOHN EDMONDSON, M.B., C.M. EDIN.

IN THE LANCET of June 25th, 1898, Dr. F. Willcocks reports a fatal case of pyæmia following alveolar abscess which occurred in the Evelina Hospital for Sick Children. The following is another example of the serious effects which may result from this cause. A few years ago I attended a boy, aged fifteen years, who on account of a gum-boil had an incisor tooth extracted by a chemist. Two days later he began to complain of increased pain in the gum and also in the face. There was a quantity of pus in connexion with the socket of the canine tooth and with the three adjoining teeth, all decayed, of the same side. The cheek of the same side presented the typical appearance of a case of diffuse suppurative cellulitis. The general symptoms were those of slight jaundice, cough, pain in the chest, hæmorrhagic sputum (due to consolidation of the base of the right lung), delirium, and great depression and emaciation. There was no appreciable hepatic or splenic enlargement. The temperature was 105° F. and the pulse was 140. I extracted the three decayed teeth and made several incisions down to the cellular tissue of the face, and this was followed by gradual improvement which went on for about two weeks. An abscess then formed in the lower end of the humerus, which was opened and drained. A little later another abscess formed in the lower end of the radius, which was similarly treated. The patient continued to be ill more or less for several months but ultimately recovered, though he still suffers from stiffness of the elbow-joint and wrist-joint in consequence of the suppuration.

Dr. Willcocks says that pyæmia from alveolar abscess is rare, and he points out the uselessness of any treatment except the immediate extraction of the carious teeth in the case of abscess due to temporary teeth. This, I think, would apply equally well to the same condition when it is due to abscess caused by permanent teeth. In this case had all the carious teeth been removed early no doubt the patient would have been well in twenty-four hours. I am indebted to Dr. Kershaw of Farnworth, near Bolton, in whose practice this case occurred, for permission to report it.

Burscough.

SUPERSTITION IN SOMERSET.—The Wells city magistrates last week investigated a charge brought against a man named Elliott for unlawfully using "certain subtle craft, means and devices" to deceive a person on July 20th. It appeared that the defendant had informed a woman that somebody had been "at her child again and cast a devil into her," and ultimately he consented to drive the devil or witch out of the child for 7*s.* 6*d.* The child, however, became worse and eventually died. Defendant handed to the magistrates a number of testimonials from people who had asked his advice. The writer of a letter sent from Shepton Mallet said that her daughter was getting on "wonderful," another from a farmer expressed thanks for the cure of two cows and a mare whose illness was due to witchcraft. It was stated that the defendant had received £120 from 200 people who had consulted him in Bristol, Langport, Glastonbury, Shepton Mallet, and nearly all parts of the county. The magistrates sentenced Elliott to two months' imprisonment with hard labour.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

EAST LONDON HOSPITAL FOR CHILDREN.

A CASE OF LARYNGEAL STRIDOR: REMOVAL OF ADENOID VEGETATIONS.

(Under the care of Dr. EUSTACE SMITH.)

THERE are probably several distinct causes of laryngeal stridor in children and the following case, especially when considered in connexion with the others recorded by Dr. Eustace Smith, shows that the presence of post-nasal "adenoids" is no unimportant factor in its etiology. The area of the results produced by these troublesome vegetations is steadily growing, and they are now held responsible for many more symptoms than was the case a few years ago. For the notes of the case we are indebted to Dr. J. Shardlow, resident medical officer.

A boy, eight months old, was admitted to the East London Hospital for Children on May 18th, 1898, with a history of (1) having made a "crowing" noise and (2) of having difficulty in swallowing, both dating from birth. He was a full-term child and was said to have had "snuffles" when six weeks old. The parents were healthy; they had no other children. On examination the patient was found to be well nourished; he lay fairly comfortably in bed, the alæ nasi working slightly. He was evidently rickety—there being marked "bossing" of the frontal bones, thickening about the radial epiphyses, and "beading" of the ribs. The anterior fontanelle was large and the edges of the bones forming the boundaries of the fontanelle were greatly thickened. The lips were of a good colour and a distinct stridor was heard when the patient was lying quietly in bed, but when attempts at swallowing or crying were made he became extremely cyanosed and during expiration not a sound was heard, but in inspiration a very loud "crowing" occurred and was audible in any part of the ward. The mouth was kept constantly open and well-marked depressions were seen above the alæ nasi. Numerous adenoid vegetations were felt in the naso-pharynx on examination with the finger. The hair was rather profuse and the eyebrows were well marked. There was no sign of congenital syphilis. In the chest there was well-marked infra-mammary recession on both sides, and there was a depression at the xiphisternum. A few rhonchi were heard in the lungs, otherwise they were normal. The liver was enlarged and the spleen could not be felt. On May 19th, under chloroform, Dr. Shardlow removed the adenoid vegetations with the aid of the curette and the finger-nail. On the 20th no stridor was noticed when the patient was lying undisturbed, but when taking food he got attacks of dyspnœa and "crowed" in inspiration. The temperature was 101·4° F. and there was a considerable quantity of nasal discharge. On the 27th the temperature became normal and for the first time since admission a noise was heard during expiration when the patient attempted to cry. Inspiratory crowing was still present, but only when the patient cried. He had still a free nasal discharge. On the 31st the nasal discharge had entirely stopped under the influence of an application of ten minims of haseline to an ounce of boric lotion. "Crowing" was still present; occasionally it was heard during the day, but frequently at night. The patient still had attacks of dyspnœa when food was being given. From May 31st to June 9th he had nasal discharge again. "Crowing" occurred until the 10th. Very little difficulty was experienced now in swallowing. On the 20th no "crowing" had been heard since the 10th, there was no difficulty in swallowing, and the patient was discharged from the hospital. The patient was seen again on July 20th and the mother stated that she had never once heard the "crowing noise" since the patient left the hospital. Thus the stridor disappeared just about three weeks

after the operation—i.e., after the removal of the adenoid growths.

Remarks by Dr. SHARDLOW.—Dr. Eustace Smith pointed out in two papers which appeared in THE LANCET of May 25th, 1895, and March 19th, 1898, that there is a close relationship between some cases of laryngeal stridor and adenoid growths, so much so that if the vegetations be removed the stridor disappears. In this connexion the above case is very interesting and confirms the opinion expressed in the papers mentioned. I am convinced that recovery in the present case was delayed by the meteorological conditions which prevailed at the time, because when the weather was damp the patient seemed to be much worse and the nasal discharge was more profuse. The effect of the removal of the adenoids in this case, I take it, was very striking. Not only did a laryngeal stridor which had been present since birth disappear in three weeks, but also the child showed much more intelligence and improved in every way. For permission to publish the notes of the case I am indebted to Dr. Eustace Smith.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

A CASE OF ACUTE INTESTINAL OBSTRUCTION; LATENT HERNIA; LAPAROTOMY; REDUCTION OF HERNIA FROM WITHIN; DRAINAGE; RECOVERY.

(Under the care of Dr. ALEXANDER.)

IT can hardly be disputed that for strangulation of inguinal or femoral hernia the ordinary external incision is the best, as the hernia is situated comparatively superficially and so no deep dissection is required, but in the case of an obturator hernia the sac is so deeply placed that the dissection needed to reach it is difficult, and therefore an abdominal section is preferable, especially when we consider the slight local indications of the hernia. In cases of inguinal or femoral hernia, if the local signs of a hernia are wanting, owing to the small amount of bowel involved, a laparotomy offers the best chance of success, as the cause of the obstruction of the bowel will then certainly be discovered, though the dangers of sepsis are undoubtedly increased. For the notes of the case we are indebted to Mr. C. E. Morris, senior house surgeon.

A boy, aged fifteen years, was admitted to the Royal Southern Hospital, Liverpool, on the afternoon of March 2nd, 1898, giving the history that six days previously he had been, when dismounting from a pony, suddenly seized with very severe pain in the right side of the abdomen. He vomited and three loose stools containing a little blood were passed in rapid succession. From the onset of the attack up to the admission of the patient to the hospital no stools or flatus had been passed. All nutriment taken had been vomited. The pain had become less severe but was still greatest in the right side of the abdomen. There had been no tenesmus. On admission the patient's eyes were sunken and the features were drawn and pale. The legs were extended and the abdomen was found to be uniformly enlarged, firm, tympanitic on percussion, and not moving with respiration, but it was not hyperæsthetic. No special tumour could be found. The temperature was 98·4° F. and the pulse was 88 and small. It was decided to explore the abdominal cavity. Accordingly, a few hours later the patient was prepared for operation and anæsthetised. On further careful examination it was thought that a very small indefinite tumour could be felt near the middle of the right Poupart's ligament. The abdominal cavity was opened by an incision above, and nearly parallel to, the right Poupart's ligament and was found to contain much clear fluid; the small intestines were discoloured and distended. A little knuckle of bowel, just sufficient to occlude its own lumen, was found tightly grasped by the right crural ring. This was cautiously and easily withdrawn and as its condition, although very deeply congested, did not suggest gangrene it was not further interfered with. When the hernia was being withdrawn a quantity of dark sanguineous fluid came away from the sac and was prevented by sponges from entering the abdominal cavity. The wound was closed, a glass drain carrying a piece of double cyanide gauze being inserted into the peritoneal cavity. On March 3rd the drain was removed. The pulse ranged from 100 to 120 and the temperature was 98·4°. On the 4th ten soft stools were passed. The patient made a good recovery, with the exception that suppuration occurred along the suture tracks, and on the twelfth day after the operation left orchitis developed, suppurated, was incised and healed rapidly.

Remarks by Mr. MORRIS.—The points for consideration suggested by the case are as follow: 1. The difficulty of diagnosing a small femoral hernia (almost a Littré's hernia), especially when there is great distension of the abdomen. 2. Rarity of femoral hernia in boys. 3. The occurrence of *left* orchitis after a wound of the right side of the abdomen. Was this caused by the end of the tube impinging upon the left vas deferens or by sepsis travelling in an unusual path? 4. The dangers of peritoneal infection from the hernial sac by the intra-abdominal method of operating are well shown in this case. Had the fluid in the sac been septic or the bowel sloughing it would have been very difficult with sponges to prevent the possibility of peritoneal infection. Moreover, the sac would have had to be dealt with externally afterwards.

Reviews and Notices of Books.

Operative Gynæcology. By HOWARD A. KELLY, A.B., M.D. 2 vols., 1100 p.p., with 24 Plates and 550 Illustrations. Royal 8vo. London: Henry Kimpton. 1898. £3 3*s.* net.

THE announcement that Dr. Howard Kelly was writing a work upon operative gynæcology led us to anticipate its appearance with great interest. The book, which is in two volumes, has now been published and is undoubtedly the most important work upon this subject which has yet been written in the English language. Not only the great excellence of the letterpress, but also the artistic merit of the very numerous illustrations with which it is furnished, renders the work one well worthy of the American school of gynæcology and of the high reputation of its author.

The first two chapters consist of a very full description of the methods to be employed in attaining asepsis and antisepsis, both in hospital and in private practice. The difficulties which beset the perfect sterilisation of catgut has led many surgeons to give up this most convenient form of ligature. From 1890 to 1894 in the Johns Hopkins Hospital the catgut was prepared by soaking in ether and boiling in alcohol under pressure. At the beginning of 1894 an outbreak of sepsis occurred, which was almost certainly traced to the use of catgut prepared in this way. Since 1895 a modification of Krönig's cumol method has been employed with success. This method consists of several steps. First the catgut is heated in a sand bath at 80° C. for one hour, it is then placed in cumol at 100° C. and heated up to 165° C. (331° F.), this temperature being maintained for an hour, and finally it is dried at 100° C., for two hours in a sand bath or a hot air oven, and thence transferred to sterilised glass tubes until used. The process is somewhat troublesome, but as it appears to be efficient it should be of service to surgeons who wish to be certain of the asepsis of their catgut. Schatz's method of disinfecting the hands by immersing them in hot saturated solutions of permanganate of potassium and oxalic acid after a thorough preliminary scrubbing with hot water and soap is recommended, and the great importance of the preliminary washing for a definite length of time is insisted upon. The chapter upon the Topographical Anatomy of the Pelvis is remarkable for the great beauty of the illustrations, especially those illustrating the anatomy of the small intestine. The anatomy and action of the levator ani muscle are well described. Under Gynæcological Examinations the great value of photography is pointed out and the chapter is illustrated by a number of drawings obtained in this way of the various forms assumed by the abdomen when distended by tumours or other conditions. The examination of patients in the dorsal and other postures is fully described and the great value of rectal

examination after distension of the bowel by air is drawn attention to. From our own experience we can fully endorse all that the author says as to the excellence of this method of examination in difficult cases. Examination of the rectum itself in the knee-chest position through a long straight speculum is recommended, this method being of special value when it is wished to localise the opening in cases where a pelvic abscess has burst into the bowel. Under Diseases of the External Genitalia a very interesting case of fibro-myoma of the round ligament growing within the inguinal canal is recorded. The author directs attention to the fact that negresses appear peculiarly liable to the curious condition known as elephantiasis of the vulva. He considers it to be the result of chronic inflammation and blockage of the lymphatics, the commonest exciting cause being syphilis. A case of adeno-carcinoma apparently beginning in the left vulvo-vaginal gland is figured, but, as is pointed out, Gottschalk and others have shown the presence of adenoid elements in the upper part of the labia majora and it is possible that the tumour rose from these rather than from the gland of Bartholin. In considering complete tear of the recto-vaginal septum the author recommends a denudative operation, the posterior vaginal column being as far as possible preserved, while Emmet's operation is recommended for the common condition, the result usually of much childbearing, known as a relaxed vaginal outlet. Dr. Kelly is inclined to agree with Bumm that cases of true gonorrhœal vaginitis are rare and that most cases of so-called gonorrhœal vaginitis arise from secondary irritation due to the stagnation of purulent discharges from an infected cervix. More than one-third of the first volume is taken up with the chapters upon diseases of the bladder, urethra, and ureters. An important section is that devoted to the topography of the bladder, the author laying down certain definite landmarks the general use of which in describing the appearances noted in cystoscopy would greatly facilitate their localisation. A very good and full account is given of cystoscopy as practised by the author, an atmospheric dilatation of the bladder being obtained by posture and a short, straight cystoscope being used. This method is of the greatest practical value and has placed the treatment of diseases of the bladder upon a more certain and scientific basis. It is easily practised, is not attended with any danger if due care be taken, and deserves to be more widely known and used than it is at the present time in the treatment of bladder and renal affections. It is quite impossible for us in the course of a review to notice all the points of interest alluded to in these chapters. They are well worth reading by all who are interested in the subject, and the cases and results quoted show how extremely useful this method of cystoscopy has proved to be in the diagnosis and treatment of diseases of the urinary tract. Under Vesico-vaginal Fistulæ the great advances which have been made in the treatment of the worst cases of this kind are noted and the various ingenious methods described which are now possible in place of the operation of colpocleisis, until recently the only resource in the treatment of many of these most distressing cases. The author has come to the conclusion as the result of his examinations of the bladder that in almost all the cases of a so-called irritability of the bladder there is some hyperæmia of the trigone. In cases of this kind which do not yield to general treatment he recommends topical applications to the congested region. A full account is given of the present views as to the bacteriology of cystitis, and the important fact is pointed out that the mere presence of bacteria is insufficient to cause cystitis in the absence of any predisposing cause. In the section on the treatment of chronic cystitis there is an account of Dr. Clark's method of employing a rubber balloon coated with various ointments and introduced into the bladder, and a case is quoted in which the use of this balloon covered with a 10 per cent. ichthyol and gelatin ointment gave marked and rapid relief. The unfortunate cases which occur from time to time in which a surgeon cuts down upon the wrong kidney should be greatly diminished in number by the more extended use of catherisation of the ureters, first practised by Simon, reintroduced by Pawlik, and carried to perfection by the author of this work. What a wide field has been opened up and how our knowledge has been increased is shown by the fact that no less than 80 pages are devoted to affections of the ureters. When we read that the author is in the habit of passing a catheter up to the kidney and washing out the pelvis of that organ we naturally look with some care to find what are the dangers of such an operation and what are the risks, if any, entailed upon the patients. Upon this point the results are quite reassuring. In only four of the cases in which the author has catheterised the ureters have the patients suffered from fever, and in all four of these cases the urine contained pus coming from the pelvis of the kidney. When we consider the readiness with which infection spreads from the bladder to the ureter it is obvious that these operations can only be practised safely with the strictest aseptic precautions, and this is a point upon which Dr. Kelly very strongly insists.

The cases recorded in which the diagnosis of stone in the kidney has been confirmed by the use of a wax-tipped bougie are of the greatest interest. A full account is given of the various methods available in the treatment of a damaged ureter, an accident which may happen even to the most skilful and experienced operator. The rest of the volume is taken up with the consideration of operations upon the cervix, inversion and prolapse of the uterus, vaginal hysterectomy, vaginal extirpation of submucous fibroids, and the uterus as a retention cyst.

The first three chapters in the second volume treat of the general principles common to abdominal operation, the care of the wound and the patient until recovery, and the complications arising after abdominal section. We would call special attention to the very full discussion of the difficult question of drainage after abdominal sections. After an extended experience of all forms of drainage Dr. Kelly has been slowly forced to the conclusion that it is rarely of value and often harmful and the extent to which he has abandoned its use is shown by the fact that 73 out of his first 100 abdominal sections were drained, and none of his last 100. He found while using the glass drain-tube that no less than 44 per cent. of the cases showed some form of organism present. The glass tube was therefore abandoned and gauze drains were tried, but these were found to be equally inefficient. In 1893 Schauta's plan was adopted of draining only those cases in which pathogenic organisms were found on making cover-glass preparations during the operation; later still a drain was employed only when colon bacilli or staphylococci were present in abundance or streptococci in moderate numbers. A further study of the drain when used only in these few cases led to the conclusion that it usually became infected after the operation and that this infection might give rise to serious and even fatal results. The author's present practice is this: when there is any serious contamination of the peritoneum, and therefore danger of infection, from 500 to 1000 c.c. of a normal saline solution are left in the peritoneal cavity and the patient is placed in bed with her feet elevated. A drain is used in abcesses which are walled off from the peritoneal cavity and which cannot be enucleated or drained from the vagina. A drain is also used in cases of widespread peritoneal suppuration where the patient is too feeble to be treated by other means, and it is used as a prophylactic measure in cases of suturing of the intestine where there is any doubt as to the accuracy of the

suture or the ability of the tissues to hold the stitches. In performing the operation of hysteropexy the author recommends that silk sutures should be used, passing through the posterior surface of the uterus just below the fundus and including the peritoneum and subperitoneal fat. In 4 cases in which the abdomen was opened from one to three years after the operation had been performed the uterus was found lying in a position of anteflexion from 1½ to 2 inches distant from the anterior abdominal wall, to which it was connected by slender bands or a thin sheet-like adhesion. The chapter upon Conservative Operations shows what conditions can be treated in this way, and the following remark of the author is we think worth quoting: "In the light of our present knowledge of the pathology of ovarian tumours the attempts to justify the removal of small 'cystic ovaries' must be denounced as unscientific and immoral." The author has had very good results in the treatment of pelvic abscesses, cases of pyosalpinx, and ovarian abscesses in suitable cases by vaginal incisions and drainage. Of 62 such cases 32 were cured and 2 died, of the remainder some were greatly benefited, while a small proportion were no better. In many cases Dr. Kelly recommends the removal of the uterus with the diseased tubes and ovaries. We cannot give his reasons for this in detail, but they will be found in the chapter devoted to this subject, as will also the reasons why he continues to prefer abdominal to vaginal hystero-salpingo-oöphorectomy. The chapter on Ovarian Tumours contains a particularly full account of the interesting class of papillary tumours of the ovary. The author's recommendation in complicated cases of ovariotomy not to hesitate to remove the uterus with the tumour is no doubt sound. For the last three years Dr. Kelly has been limiting the indications for vaginal hysterectomy in carcinoma of the uterus and now prefers, where possible, the more radical enucleation through the abdomen. In this way a wide dissection of the broad ligaments can be made, with a free removal of the pelvic connective tissue out to the pelvic walls together with any enlarged glands found in the pelvis or above the brim. The dangers of this operation are greatly diminished by previously placing bougies in the ureters as recommended by the author. A considerable amount of space is devoted to myomectomy and hystero-myomectomy for fibroid tumours, and the treatment of all the possible complications of the latter operation, of which the author has encountered some thirty-seven, is given in detail. In discussing the question of operations during pregnancy Dr. Kelly gives it as his opinion that this condition does not constitute a contraindication to the performance of necessary operations upon the uterus, ovaries, or tubes. Abortion does not occur as a rule unless the uterus is involved in the operations.

In the chapter on Ectopic Gestation an interesting table is given of the results during the last ten years of operations undertaken with a viable fœtus. 27 mothers have recovered out of 40, or 67·5 per cent., including 15 of the last 20 operated upon. We have no space to do more than mention the contents of the remaining chapters. They treat of the Radical Cure of Hernia, Intestinal Complications, the More Remote Results of Abdominal Operations, and the Conduct of Autopsies and the Making of Protocols. Of the plates and illustrations it is impossible to speak too highly. Many of them are triumphs of the illustrator's art, and the author is to be congratulated not only on his artists, but also upon his publishers who have reproduced the artists' drawings in such a remarkable manner.

We trust that we have given our readers some idea of our appreciation of these volumes. They are of the highest merit, will long remain the standard work upon the subject of which they treat, and should be in the hands of all gynæcologists and surgeons performing pelvic operations.

The Genesis and Dissolution of the Faculty of Speech: A Clinical and Psychological Study of Aphasia. By JOSEPH COLLINS, M.D. New York: The Macmillan Company. London: Macmillan and Co. 1898.

IT is nearly forty years since Broca made his famous discovery, which was at once the starting point of research into cerebral localisation and the origin of the study of the faculty of language. The intervening period has been filled with the records of clinical and pathological observations, the profound analyses and reasonings of some of the most gifted physicians and psychologists, for the problems to be solved have grown in intricacy as time has passed with its ever fresh accession of facts. There is, moreover, a fascination about this study of the distinctive faculty of the human race due to its special position in the sphere of mental physiology which accounts for the ardour with which it has been pursued and the treatises that have been written upon it. The latest of these contributions to its study is the work before us, for which its author received the Alvarenga Prize of the College of Physicians of Philadelphia in 1897. Its appearance is timely, in view of the contributions to the subject made last year by Dr. Bastian in his Lumleian Lectures and the recent clinical studies of Dr. Byrom Bramwell. The work itself is evidently the product of one who has carefully studied the subject and who has arrived at definite ideas concerning it—ideas which do not always coincide with those propounded by others. It is somewhat marred by the use of a phraseology which renders the perusal of the book rather irksome to the plain reader and may perchance interfere with the recognition of its undoubtedly high merits. Perhaps this is unavoidable in the treatment of a subject which is as much psychological as physiological, but it is just this which is making the study of neurology more and more the portion of a few specially trained minds. Nevertheless this book contains so much that is of general clinical interest and its author takes so much pains to clearly define his position that it is safe to predict that it will be read with interest even by those who are unable to follow every point in the intricate discussion of the higher cerebral mechanism. In an introductory chapter Dr. Collins gives his classification of the forms of aphasia—which has the merit of simplicity—and after a short historical review of the subject he enters in the third chapter into a discussion of the Genesis and Function of Speech, whilst in the next chapter he deals at length with the Conception of Aphasia, where he propounds his views with satisfactory fulness and apt illustration. Using the phrase "zone of language" to comprise that area of the cerebral cortex concerned in the mechanism of the intercommunication of ideas, he points out that this has no strictly defined limits, but that it varies probably with individuals and with races according to the degree of speech acquisition and the richness of language. The zone comprises the reception centres—where sensory impressions, mainly auditory and visual, are received—and the "emissive" centres in the frontal lobe and Rolandic region. In spoken speech the primary revival of the word to be uttered is probably in the auditory centre; whilst in written language this revival probably takes place in the visual centre. The language of signs, or pantomime, is regarded as a form of "internal speech," but we could have wished for a fuller discussion of this, perhaps the most primitive of all modes of language, than is given here. Dr. Collins adheres to the original view of Broca, which locates the speech-centre at the foot of the third left frontal convolution, to which he applies the physiological synonym of the "centre for articulatory kinæsthetic images." He refers to cases of limited subcortical lesion, especially one recorded by Elder, which go far to prove the accuracy of this view. He enters into an interesting discussion to show that there is no ground for assuming a distinctive "graphic motor centre," and

shows that there does not exist on record any unequivocal case of pure agraphia, for such as have been reported can be explained by lesions in one or other regions of the zone of language or the subcortical pathways connected with them. Summing this question up, he says: "After taking all the evidence into consideration of whatever nature, that can be cited in favour of the existence of a specialised graphic motor centre, and carefully weighing it, the conclusion is forced upon us that, so far, the advocates of the existence of such a centre have furnished us with no absolute proof. It seems to me entirely contrary to all that we know of speech, from a study of its genesis and its dissociation to look for the existence of such a centre." The next chapters deal individually with motor aphasia and with sensory aphasia, the latter being defined as being due to "the loss of the understanding of words due to interference with the function of association necessary for complete perception." The contrast is clearly drawn and is excellently illustrated by records of well-selected cases. Chapters on Diagnosis, Etiology, Morbid Anatomy and Treatment complete a work which we venture to think will rank high as an authoritative exposition of an abstruse but very interesting subject the bearings of which are largely clinical and the interpretation of which is so intimately concerned with the higher cerebral activities.

Applied Bacteriology. By T. H. PEARMAIN and C. G. MOOR, Members of the Society of Public Analysts, &c. Second edition. London: Baillière, Tindall, and Cox. Pp. xvi.–464. 1898. Price 12*s*. 6*d*.

INASMUCH as a second edition of this work is forthcoming after the lapse of only two years, it may be presumed that it has been found useful by the students, sanitarians, and others for whom it has been written. It has, indeed, a good deal to recommend it, particularly in its chemical aspects, and chemistry is becoming more and more important in modern bacteriology. The chapter on Disinfection, for example, is an excellent one and contains a great deal of practical advice which should be valuable to the medical officer of health. Throughout the book it is evident that the authors' knowledge of chemistry is thorough and well applied. To take a trivial instance, Gram's method of staining is not merely described but explained. Bacteriology, however, has also its biological and pathological aspects, and we should strongly advise the authors, when in the fulness of time a third edition is called for, to secure the services of a competent pathologist to collaborate with them. They would thus avoid such very extraordinary statements as that matter derived from the middle of giant cells (in tuberculosis) will produce tuberculosis in the guinea-pig, although the bacillus is chiefly found at their periphery. We are not aware of the name of the conjuror who has performed this miracle of *technique*. Hitherto we had regarded Metchnikoff, who isolated a single leucocyte containing an anthrax spore and watched it grow in a hanging drop, as the greatest exponent in this line. On page 103, again, we note a table from which we gather that the poisons of leprosy, malaria, and scarlet fever are acquired by intestinal infection. This may be so, but we should like to know on what observations the statements rest. The authors do not appear to have much practical acquaintance with section cutting. The unwary student who follows their directions for the preparation of sections by ether freezing will, we fear, be disappointed in his results; tissues hardened in alcohol should be soaked in water before freezing. Embedding in paraffin is not "seldom employed" and it is quite easy to prepare admirable specimens of actinomycosis without embedding in celloidin. There are some errors in the book due to sheer carelessness, such as the statement that the "diplobacillus" of rinderpest is "from ·3 to ·6 mm. in length and about a third of this in breadth" Other mistakes are philological —e.g., "bacilla" on p. 7, and "one terminal flagella" on p. 206. Some misstatements might have been corrected by a competent physiologist—e.g., the average percentage of urea in urine is said on p. 336 to be 3 per cent. The book, in fact, requires very thorough revision to render it a safe guide. In many respects it is worthy of such revision, for there is a great deal in it which is excellent. The authors have evidently been at pains to bring this edition up to date and they have compressed into comparatively small compass a large amount of important bacteriological fact.

LIBRARY TABLE.

Fonctionnement de la Maison d'Accouchements Baudelocque. Année 1897. Paris: G. Steinheil.—The report of the Maison d'Accouchements Baudelocque is on the same lines as in previous years. There are, however, some points of interest to be noted; one of the most important is the installation of an x ray laboratory. It has been found possible by this means to obtain results of great value in cases of contracted pelvis, and these formed the subject of a discussion at the recent International Medical Congress held at Moscow. The injection of antistreptococcic serum as a prophylactic measure has been continued as in the preceding year in all cases where there was reason to suppose that the patient had been infected prior to her admission to the clinic as well as in cases of infection occurring subsequently. The results obtained have been published by Dr. Wallich in the *Annales de Gynécologie*, November, 1897. During the year the treatment of incomplete abortion has undergone some modification. Prolonged waiting for the spontaneous expulsion of the placenta has been to some extent given up, and now at the end of two to three days after the birth of the fœtus if the placenta is still retained it is removed by the fingers, the cervix when necessary being dilated either by bougies or by small Champetier de Ribes's bags. The rest of the report consists of the usual full tables of results and is a model of what such a report should be.

JOURNALS.

The Journal of Tropical Medicine. No. I., Vol. 1. August 15th, 1898. Price 17*s*. annually post free.—This is an excellent first number of a journal the object of which, as explained by Sir Joseph Fayrer in some introductory remarks, "is the consideration and discussion of tropical diseases and of questions of etiology, hygiene and preventive medicine, or any cognate scientific subjects affecting so large a part of our empire." The original articles in the present number are by Surgeon-Colonel K. MacLeod on Tropical Heart, by Dr. Patrick Manson on the Mosquito-malaria Theory, by Surgeon-Captain Buchanan on Epidemic Cerebro-spinal Fever in India, and by Dr. C. W. Daniels on Filariæ and Filarial Disease in British Guiana. Mr. James Cantlie and Dr. W. J. Simpson are the editors of the journal, which is published by Messrs. John Bale, Sons, and Danielsson, Ltd., Great Tichfield-street, W.

VACCINATION AT BOURNEMOUTH.—At the meeting of the Christchurch Board of Guardians, held on August 15th, it was reported that out of 444 children born in Bournemouth between July 1st and the end of December last year only 163 were successfully vaccinated, and that in the rural district only 129 have been vaccinated out of 222 born.

ROYAL CORNWALL INFIRMARY, TRURO. — The report which has recently been issued shows that during 1897 there were 369 in-patients admitted against 357 in 1896, and that 501 out-patients were treated against 557 in the preceding year. The committee referred in sympathetic terms to the death of Dr. Helm, their late ophthalmic surgeon.

Analytical Records
FROM
THE LANCET LABORATORY.

HALOGENALBUMIN PREPARATIONS.

(LUDWIG WILHELM GANS, PHARMACEUTISCHES INSTITUT, FRANKFORT-ON-MAIN.)

SINCE first meeting with these interesting compounds at the recent exhibition at the British Medical Association in Edinburgh we have had an opportunity of examining them in the laboratory. They are known as halogen-albacids since they contain that part of the albumin molecule which lends itself to halogen substitution in the form of the soluble sodium salt. The halogens are described as being combined in intimate intramolecular combination. The halogen is not given up on treatment with dilute acids or alkalies, but on the approach of an oxidising agent the chlorine, bromine, or iodine is set free. Thus, when weak nitric acid is added to "iodalbacid" a spongy mass separates and the liquid turns a light brown. On shaking this liquid with chloroform it rapidly assumes a violet colour. Similar decomposition is produced when the other halogen compounds are treated in the same way. As is well known, iodine is very readily liberated from iodide of potassium, and this fact often leads to what is known as iodine poisoning after the salt is administered. But "iodalbacid" being an albumin derivative is less rapidly absorbed and is more slowly decomposed than iodide of potassium. In this interesting combination, therefore, iodine, bromine, or chlorine may be very favourably administered. It is probable that iodine acts on the thyroid glands after treatment with iodide of potassium by forming an albuminous substance of the nature of an iodoalbumin. The preparations are of great therapeutic interest and the application of the iodine preparation in syphilis promises to be one of the best means of administering iodine in this disease. An interesting clinical record in this connexion has been published by Dr. G. Zuelzer of the Dermatological Hospital of the University of Breslau.

"EUCRYL" PREPARATIONS.

(MAJOR AND CO., SCULCOATES, HULL.)

The name of these preparations suggests a combination of eucalyptus with the coal tar acids of the cresylic type. On examination of "eucryl" itself this proves to be so. It is a brown, somewhat syrupy liquid exhibiting a strongly alkaline reaction. It is miscible with water in all proportions. On the addition of acid the antiseptic oils are liberated. It is a pleasant and very powerful antiseptic compound. The same combination is contained in an absorbent powder which is guaranteed to contain "eucryl" in amount varying from 5 to 15 per cent. It is important that disinfectant powders should contain a standard quantity of the liquid disinfectant and we found this to be so in the present instance. The absorbent used is a powder resembling brickdust insoluble in water and in acids. "Bath eucryl" is a very pleasing combination of antiseptics and aromatics. It is a light-coloured fluid with an alkaline reaction, the active oils dissolved in it separating on the addition of an acid. On dilution with water, with which it is quite miscible, a very agreeable pine-like smell is evolved. Used in the amount specified it is admirably adapted for the bath, softening the water and exerting a healthful action on the skin. "Phenoforme" again suggests a combination of phenol with formalin and the analytical evidence obtained was quite in accordance with this surmise. It is a colourless fluid evolving on heating a pungent acrid odour characteristic of formaldehyde vapour. It is slightly acid in reaction. The combination must necessarily be a very powerful antiseptic and doubtless affords when diluted a convenient application for cleansing and sterilising surgical instruments.

CHLOROBROM.

(BURGOYNE, BURBIDGES AND CO., 12 AND 16, COLEMAN-STREET, E.C.)

The value of chlorobrom in sea-sickness, sleeplessness and hysteria has been asserted in many cases. Clinical contributions on the subject appeared in THE LANCET of Dec. 9th, 1893, and again in THE LANCET of April 24th, 1897. It is not a secret remedy, for the composition of its active ingredients is published and communicated to those who wish to prescribe the combination. The chief constituent is chloralamid of which it contains 30 grains in each fluid ounce. Chloralamid is a compound of chloral anhydride and formamide, and when used as a hypnotic is said to have no undesirable influence on the pulse, respiration, or temperature. The above firm, we believe, were the first to introduce the preparation "chlorobrom," which is a brown fluid with a strong taste of liquorice.

VIN URANÈ PESQUI.

(AGENCY: FASSETT AND JOHNSON, 31 AND 32, SNOW-HILL, E.C.)

This wine is prepared in Bordeaux and contains nitrate of uranium, bromide of lithium, pepsin and quinine. The essential constituent is uranium nitrate, which has been given with good effect in diabetes according to an article in THE LANCET.[1] According to a pamphlet before us cases are recorded where the reduction of sugar in the urine was from 80 grammes per litre to 1·70 grammes. The vehicle is said to be old Bordeaux wine (Medoc). It contains some sugar. We cannot regard the mixture as at all palatable, and the ingredients, if they are valuable at all in the treatment of diabetes, might with advantage be exhibited in another way. We do not think wine is a proper or suitable channel for administering the drugs indicated, which are said to be useful in obviating waste in diabetes. We obtained satisfactory evidence of the constituents enumerated and in addition the wine showed the following composition: alcohol, by weight 8·79 per cent., by volume 10·91 per cent., equal to proof spirit 19·11 per cent.; extractives, 8·24 per cent.; and mineral matter, 0·27 per cent.

PATENT NON-POISONOUS MATCHES.

(THE MERTON MATCH CO., MERTON ABBEY, S.W.)

We are quite prepared to admit that these matches do not contain any harmful ingredients. We could find neither phosphorus nor sulphur in the tips and hence on ignition no phosphorous or sulphurous fumes were evolved. This in itself is an improvement, but from the point of view of a satisfactory lighting match we cannot say much in their favour. To start with, the match frequently requires repeated rubbing before it ignites and when ignition does occur it is of the nature of a spiteful flare. The rubber on the box contains amorphous phosphorus. We have examined the tips and the only ingredients we found which are common to other matches were powdered glass, glue, and chlorate of potash. To say that they give pleasant fumes is a slight exaggeration. We should gladly welcome a match which is satisfactory alike to the user and to the persons engaged in its preparation, but we are not prepared to say that the matches under examination possess all the attributes claimed for them. These remarks apply also to the wax vestas, fusees, and "flamers" which have also been submitted to us.

[1] THE LANCET, August 10th, 1895, p. 356.

New Inventions.

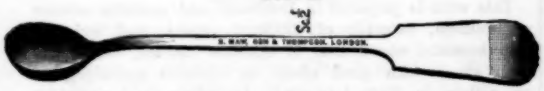
WIRE SUTURE-CASE.

To facilitate wire suturing I have devised a case containing in small compass all my instruments for suturing fractures, whether of maxillæ, patellæ, or long bones. It has been made to pattern by Messrs. S. Maw, Son and Thompson and has been so arranged that the inside tray may be lifted out and its contents boiled in the steriliser without disturbance. The case contains bayonet-shaped drills, silver sutures of varying

FIG. 1.

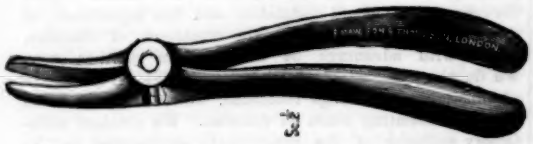
thickness, pliable needle, forceps, &c. The needle (Fig. 1) is made of plated copper-wire, with an eyelet at one end. This having been passed through the second drill-hole may be threaded for the purpose of returning the wire. Being of soft metal the needle is readily bent to any required angle. The spoon (Fig. 2) protects the tissues by receiving the point of the drill and also of the wire and

FIG. 2.



gives the latter a turn in the desired direction. The wire may then be seized and lifted from the floor of the mouth or depth of wound by the long-bladed forceps (Fig. 3).

FIG. 3.



When the suture is ready for twisting the key (Fig. 4) may

FIG. 4.

be used in the manner described in THE LANCET of Feb. 26th, 1898, p. 571 (also Dec. 3rd, 1892, p. 1266). The side cutters (Fig. 5) sever the suture at any required point.

FIG. 5.

Hitherto there have been two great difficulties in the wiring of bones—(1) the drilling and (2) the return of the wire through the second channel made. The first I have overcome by using a dental engine and the second by devising the instruments described above.

T. S. CARTER, L.D.S.R.C.S. Eng.,
Honorary Dental Surgeon to the General Infirmary, Leeds.

EXHIBITION O ROENTGEN RAY WORK AT EDINBURGH.

AN interesting feature of the Pathological Museum at the meeting of the British Medical Association at Edinburgh was a collection of skiagrams which abundantly illustrated the wide range and usefulness of this new aid to diagnosis. Mr. Noble Smith sent a technically excellent series of congenital dislocations of the hip, together with a case of coxa vara, the exact nature of which could be established only by the photograph. Dr. Macintyre of Glasgow showed the transposition of viscera in a youth whose age was not stated. This beautiful photograph, about 16 in. by 24 in., was evidently taken with the patient in the prone position. One interesting point was that the ribs were clearly shown even in front of the liver.

Mr. Lynn Thomas sent eleven instances of Colles's fracture which showed that the styloid process of the ulna is often broken off in that injury. A child's arm with deformity like that of Colles's fracture was found to have a transverse fracture of the radius higher up than the site originally described by that surgeon. This latter point was also clearly brought out by Mr. Griffith Wilkin (London). Mr. Alexander Miles exhibited a characteristic skiagram of a case of double knock-knee which demonstrated how such a photograph of the bones might guide the surgeon before operation. He also showed an example of bad union of a femur fractured below the trochanter which revealed the exact state of affairs with striking effect. Dr. Walsh sent two instructive skiagrams taken in a medico-legal case where an unsuccessful attempt was made to detect an alleged fracture of the ribs over the liver. An aneurysm of the aorta was discovered, however, and a record obtained of extensive bronchiectatic cavities in the lung. Dr. Dawson Turner sent some beautiful stereoscopic Roentgen photographs of the injected blood-vessels of the principal organs of the body. His method is to inject in the ordinary way and then to take Roentgen photographs from different points of view. Either the object or the focus-tube must be displaced laterally in taking the second photograph. He used a displacement of 6·6 inches with the tube 12 inches from the sensitive plate. A Wheatstone stereoscope yielded a remarkable effect in liver, heart, and kidneys. This method would probably yield good results in the case of embedded foreign bodies. Dr. Harry Rainy and Mr. H. J. Stiles sent an excellent series of mercurial injections of the blood-vessels of the human body. These photographs had a distinct educational value and furnished a bird's-eye view of the arterial circulation. The same gentlemen contributed a set of skiagrams illustrating various diseases of bone and showing how, owing to rarefaction or sclerosis, it was possible to define many morbid processes which must have remained doubtful apart from operative interference. A gumma of the ulna showed the irregular erosion of the bone in the centre of the growth and a fresh formation (sclerosing osteitis) at the edges and presented a clear picture of the pathological changes which were taking place. An old Colles's fracture displayed wonderful bone texture and compared favourably with the best work shown at the societies. An interesting case revealed destruction of epiphyses in a child's hand injured by frost-bite. By contrast with the unaffected hand the epiphyses were seen to have gone more or less completely from the base of the first and second thumb phalanges and the base of the first phalanx of the forefinger. An abscess of the calf showed a large diffuse shadow in the substance of a greatly enlarged calf. The soft tissue of the boot came out admirably, so that even the stitches were visible. One remarkable photograph was that of a stunted hand of which the bones were greatly thickened and bossed. The bones of a male dwarf, twenty-three years of age, displayed little advance in ossification over those of a rickety girl ten years of age. A case skiagraphed by Dr. Thompson showed the character of a fracture in the upper part of the tibia, thereby affording valuable indications for treatment. Dr. Steven (Glasgow) exhibited a good and clear photograph of hypertrophic (non-pulmonary) osteo-arthropathy; there was subperiosteal new formation of bone in the radius and the metacarpal bones. Taken as a whole the collection afforded an excellent survey of the present position of Roentgen photography in the world of scientific medicine.

THE LANCET.

LONDON: SATURDAY, AUGUST 27, 1898.

ABOUT three years ago it was announced that Professor BEHRING had applied in the United States for a patent for his "invention" of diphtheria antitoxin, then still on its trial as a therapeutic agent. The medical world at first refused to credit a rumour which pointed to a line of action so contrary to the first principles of scientific ethics and morality. It is the proud boast of the man of science that in all things concerning the health and well-being of humanity his researches are open to the world and that he neither seeks nor expects any other reward for his labours than the approbation of his fellows. But, alas, in these days of commercialism and the love of material riches such rewards as those may seem to be empty though honourable, and as a discovery becomes of value it comes to be regarded as a thing which can be bought and sold, something which can be made to yield a handsome profit provided a monopoly can be obtained for it. This view has hitherto been sternly discountenanced in medicine by all who desire that its practice should be kept free from personal greed, and it was with relief that the medical world learnt of the failure of the application to create an antitoxin monopoly in America. Unhappily, with a persistence worthy of a better cause, this application was repeated again and again, and last week we had the pain to announce that Professor BEHRING had at last gained what he had been so long seeking. We could have wished that he had been convinced by his previous failures of the futility as well as the foolishness of his embarking on a course so repugnant to the ideas which govern medical science. Besides, the claim for such a monopoly seemed on the face of it to be ridiculous, since every detail of the process for which the patent was sought has long been common property. No wonder that there is in the United States the expressed determination to contest the claim to monopoly on the part of those who have been for the past few years engaged in preparing the remedy. The only possible justification for the step would be that Professor BEHRING was so convinced that the process was one too intricate to be properly carried out by anyone else as to render it incumbent on him to prevent the market being flooded with inferior articles likely to bring discredit on the value of his remedy. But no one, not even Professor BEHRING himself, could be rash enough to advance such a plea in defence of his ill-judged action. The mode of preparation of the serum is well known, it is practised with great care in many quarters, and the efficacy of the antitoxins produced from other laboratories than those of the Höchst-Farbwerke has been amply proved. No; we fear that the patenting of the process can bear but one construction—namely, the desire to secure a monopoly in a remedy of proved value for which there will always be a demand. We would fain think that Professor BEHRING himself has had no active part in the proceedings to which his name is attached and that he is not really desirous of exploiting his admirable scientific researches to his own advantage. May not the manufacturing company which undertakes the preparation of the serum under his auspices have been the active party in the business, swayed thereto by the commercial instinct which has nothing in common with pure science? If, however, Professor BEHRING has been more than passive and is indeed responsible for these repeated applications to the United States Patent Office, then we can only express our deep regret that he should have persisted in a course which has no parallel in the annals of scientific medicine. It cannot fail—as indeed has already been the case—to evoke much scrutiny into the precise claims of Professor BEHRING to the discovery of the immunising serum. Such a claim on his part has been styled "preposterous," and it must be confessed that large as has been his share in the work many others have contributed to it, whilst the whole foundation of "artificial immunity" was laid by the genius of PASTEUR. With even more justice might claims have been made for patents for thyroid extracts, not to mention many other remedies which have been freely given to the world by those who first discovered their properties. No one desires to see pharmacology entangled in a maze of monopolies or therapeutics dominated by patent medicines.

The indignation aroused by the granting of this patent was typified in the article in *Pædiatrics* from which we quoted last week. There is before us as we write a similar protest in the leading columns of the *Medical Age* (Michigan) and, indeed, our exchanges show that many medical and pharmaceutical journals in the United States are contributing their quota to the outcry. The *Medical Age* asserts that Professor BEHRING'S "claim to be the exclusive inventor of antitoxin not only indicates a spirit of commercialism which does its possessor no credit, but it displays a disposition to assume credit for the labours of others and to make of these an occasion of personal gain which can only indicate a high degree of moral perversity." This is strong language and yet it is not unmerited, for, according to that journal, the following are Professor BEHRING'S "claims." 1. A process "of producing diphtheria antitoxin, which consists in inoculating horses or other animals capable of being infected with diphtheria with repeated doses of diphtheria poison or living diphtheria bacilli of gradually increasing quantity and strength so as to immunise them and form in the blood a counter-poison for destroying the poison secreted by said bacilli, drawing off the blood from said animals, separating the serum from the blood-corpuscles, and concentrating the former for use as substantially set forth. 2. As a new substance, diphtheria antitoxin, consisting of the concentrated serum of the blood of animals treated with diphtheria poison, and having the characteristic of immunising test animals against infection with diphtheria, and curing them when artificially infected with diphtheria, said serum containing a counter-poison having the property of destroying the poison secreted by the diphtheria bacilli as substantially set forth."

It is difficult to conceive how the United States Patent Office could after repeated refusals have been convinced

that the applicants were entitled to be regarded as the sole discoverers of a method which was the outcome of slow and prolonged scientific investigation and reasoning pursued in all directions. Much less can it be understood what fresh facts could have been adduced to cause a change in policy and to create a monopoly in a remedy the production of which has for three or four years been carried on at several centres in the United States. The American critics deplore the laxities of their Patent Office and hint that it would be impossible for similar applications to be entertained in Europe. It is possible that such have been made, or else that advantage has been taken of the greater facilities afforded in the United States for obtaining patents. The pity of it is that any such application should have been made at all. Surely Professor BEHRING never dreamed of taking such a step when he revealed his process and gave it freely to the world. It must have been an afterthought, and it almost bears the appearance of having been deferred until the scientific worth of the discovery had been appraised and the commercial value of the remedy thereby heightened. After all, the award of the patent may prove a hollow triumph; it will be most difficult to determine in the courts as to its infringement and it may well happen that the gains of the monopoly will be illusory.

WE have already commented in part on the lessons of an error of diagnosis at Guy's Hospital in the case of a carman and pointed out how difficult it is in such situations to be always right.[1] The element of alcoholism in hospital cases is so frequent and enters so largely into their causation that the wonder is that such errors do not occur more frequently. But error must be treated as error and we have no wish to make excuses for it. The people have a right to expect at hospitals the elimination of all such risks and our object in returning to the subject is to extract from the case and from an equally significant case which quickly followed still further lessons for our readers' information. The second case was that of a child, of Honbury-road, Nunhead, aged ten years, who was taken to Guy's Hospital on August 10th with an injury to the eye from a piece of wood which had pierced it. He was not admitted, but Mr. STOEHR, a dresser, instructed the mother to bring the child to see him the next day at a quarter-past one. Then some unexplained misunderstanding occurred. The mother on the next day could not find Mr. STOEHR; Mr. STOEHR could not find the mother. The accounts given in the press and at the inquest do not allege the same reason for their having missed each other in the waiting-room at the hospital. The child was kept waiting and before admission had some sort of convulsive seizure. On the next day he died from meningitis, the initial injury having been of a far more serious nature than the dresser had been able to detect.

The people, we say, have a right to expect at hospitals the completest elimination of the chances of error which is possible. In such institutions there is, or there ought to be, the fullest convenience for checking errors. The accommodation for detaining cases should be complete. Twelve hours' detention would in itself be a great security against confounding fracture of the skull with mere alcoholism. In the case of the unfortunate carman such detention would have been sufficient to clear up the diagnosis, though it might not, and properly would not, have altered the sequence of events. Moreover, a hospital is supposed to be a place where in the multitude of counsellors there is safety. One resident medical officer may be gifted with more caution or more insight than another, and in all difficult cases the staff ought to be available for purposes of reference. It is creditable to the medical staff that at Guy's Hospital a severe tradition still insisted on by its surgeons requires the assistant surgeons to sleep in the hospital during their week of office, so that they are as ready to give counsel by night as by day. The fact that these cases have occurred in an institution so well governed as Guy's Hospital, in which the severe tradition to which we have referred obtains, only makes the lessons to be learned of prudence and circumspection more significant. To us it seems that these errors form only another illustration of the great abuse of hospitals which it is our weekly duty to expose and denounce. Treatment in hospitals may become hurried and hasty because the public will persist in attending for the gratuitous treatment of petty ailments. The really grave cases for which hospitals primarily and almost exclusively are meant are elbowed out by hundreds of cases which might just as well be treated at home by general practitioners. If once we could bring back hospitals to their primary use and restrict their services to the really necessitous as well as to grave cases which cannot receive proper nursing or adequate professional attendance at home we should do much to prevent these regularly recurring catastrophes. It is quite probable that both the patients whose stories have recently received such public notice would have fared better (possibly the result of one of the injuries might have been different, as the coroner suggested), if the patients had been kept at home and treated by the nearest practitioner. The fruitless and jolting journeys, the loss of time and the waiting, would all have been avoided. We hope that the authorities of Guy's Hospital will take in good part our implied suggestion that the great evil of hospital abuse may have been at the bottom of the errors of judgment. All friends of hospitals must rejoice that the governors of Guy's Hospital are beginning to realise recovery from the cares of hard times and attenuated income; but they will rejoice more if the governors will set an example to other hospitals of attempting to deal seriously with the admitted evils of indiscriminate hospital relief to all and sundry applicants so as to leave time and leisure for serious cases.

If any doubt is felt as to the urgency of these evils it must be removed by the universal feeling of the profession on the subject. At the recent meeting of the British Medical Association in Edinburgh various papers, an abstract of which we publish to-day, were read under the auspices of the Hospital Reform Association. Mr. GARRETT HORDER in his paper gives particulars of the out-patient system in Scotland. He shows that it threatens to assume in the north the same evil proportions as in England and

[1] We may add that we have since received from the house surgeon a very explicit statement of the matter, in which the difficulties revealed ully justify the extension to him of all sympathy.

that there is a slowness in that provident division of the kingdom to guard against the subtle evils of hospital abuse. In Edinburgh alone the out-patients number 109,141. It is not credible that the great working-classes of the Kingdom whose trade organisation is so evident and so efficient, will think the less of the medical profession for organising itself for the vindication of its just claims or that they will always ask to obtain their ordinary medical attendance either gratis at hospitals or at the cost of medical men working night and day for the wages of farm servants. The really bad cases which require hospital treatment will be better cared for when the thousands of ordinary cases have been eliminated from the hospital out-patient department. The occurrence of such errors as those on which we have commented and which do great harm to our hospital system will then be much less frequent. One point was well brought out at the meeting of the Hospital Reform Association in Edinburgh, and that is the importance of the coöperation of the medical staffs with the general practitioners of the country. Their interests in the long run must be identical, and the sooner each class appreciates this the better for both.

THE unfortunate community supplied with water by the East London Waterworks Company are again undergoing the terrors of a water famine. Since the droughts of the summers of 1895 and 1896 the East London Waterworks Company have added considerably, we may say enormously, to their storage capacity. The Warwick East Reservoir, which was completed in May of last year, has an area at the top of the water-level of forty-five acres. The top of the water-level is 35·60 ft. above Ordnance datum and the reservoir is capable of holding 210,248,000 gallons of water. We probably do not exaggerate in stating that the storage capacity of the company is equal to over 1,000,000,000 gallons, while the necessary powers for further developments have been obtained. But although there is such excellent capacity for containing, contents are sadly wanted. By the end of last week only a seventh part of the possible storage was in hand, and now the regular supply has broken down. On Monday last the company announced to its clients that the water would be turned on for six hours *per diem* only and, to add to the inconvenience of these luckless people, gave them no full intimation of the hours during which the supply for the intervening periods might be drawn and, if their complaints may be believed, failed to ensure regularity in the delivery of the intermittent supply. We sympathise deeply with the clients of the East London Waterworks Company in the extreme discomfort which is thus entailed upon them, and must also point out that the matter is one of urgent importance to all the metropolis because of its sanitary bearing.

A letter in the *Times* of Wednesday last signed by twelve medical men practising in Ilford, one of the districts within the area supplied by the company, draws attention to the gravity of the situation with which they find themselves confronted. "We have already," writes Mr. MURTAUGH HOUGHTON and his co-signatories, "in our respective practices numerous cases of diarrhœa, and the proportion of these will no doubt enormously increase, nor apparently will the water company be content until they have been directly responsible for some hundreds at least of deaths both among adults and infants, for in our opinion the stoppage of the water-supply will as directly cause their deaths as if the patients had been actually poisoned." This, of course, is very strong language, but we doubt if it is in excess of the truth, save where the words imply that the company is actually striving to bring about the serious consequences which the medical men of Ilford predict. The company of course does not desire to be short of water; it does not work to bring itself into its present discreditable position. On the contrary, the officials of the company with the chief engineer at their head have made very strenuous efforts to alleviate the troubles of their *clientèle*. They have arranged with the Hackney Vestry for a house-to-house delivery of water by carts supplied by the vestry at the company's expense. This water is delivered free during the hours when the company's water is turned off and all persons failing to secure a supply are requested to communicate in writing with the Hackney Vestry, which body is doing admirable service to the public and deserves great credit for its energy and promptitude. The company has promised to attend at once to all requests made to it from hospitals and similar institutions and to do its utmost to guarantee that the work of such places will be carried on without the additional risk of a scanty water-supply. Stand-pipes have been erected in many of the most crowded districts of the company's area, to which the people can go with jugs and other receptacles to secure some small supply to keep in their houses. All these things the company have done, but the total inefficacy of such makeshift methods to cope with the mischief of a water famine need not be dwelt upon; nor does the company appear yet to have done all that is possible in its sad situation. We are told that the New River Company and the Kent Company will provide the East London Waterworks with an auxiliary supply. But readers of THE LANCET, by consulting the articles of our Special Commissioner published in our columns last year, will see that the East London Waterworks Company should be able to receive, through its Thames intake, assistance from at least two other companies. Has this assistance been applied for yet? And if not, why not?

The question of the water-supply of London is an exceedingly difficult one, and whoever should rashly draw general deductions from any small collection of facts would risk deceiving his hearers and writing himself down an injudicious person. Therefore we do not follow in the suit of those who claim that the condition of things in the North-east of London by itself absolutely condemns our present metropolitan water-supply in its source, its management, its conduct, its engineering, and its morals. The harm which has actually been done so far is, we believe, not very great, and the efforts of the company may avail to see that it does not become greater, while the drought this season has been extraordinarily persistent and should not be regarded as conforming to normal English weather. But there is no denying that this, the third consecutive water famine which has occurred in a part of the metropolis

largely occupied by a crowded and poverty-stricken populace, furnishes a more convincing piece of evidence as to the necessity for reinforcing the water-supply of London as a whole than all the evidence which has yet been taken before Royal Commissions or than ever will be taken. The mid-summer relations between the East London Waterworks Company and the denizens of East London form an argument that is at any rate specious for the amalgamation of the companies under one authority, so that those with ample storage could come to the aid of their depleted brethren; while the same relations go far to justify the princely scheme of the London County Council for creating reservoirs of boundless capacity in the Welsh valleys.

Annotations.

"Ne quid nimis."

THE HEALTH OF THE PRINCE OF WALES.

WE are pleased to learn on the best authority that during the past fortnight the progress made by H.R.H the Prince of Wales has been very gratifying to his surgeons. Indeed, during the five weeks and a few days which have now elapsed since the accident nothing has occurred to interrupt the progress of the case. The local conditions are all satisfactory. There is but slight effusion remaining in the joint and but limited swelling in the surrounding parts. The fragments are maintained in close apposition, the amount of separation not exceeding a quarter of an inch, and the progress of union is proceeding in the ordinary way. Gentle massage has been daily practised with much advantage to the muscular tone and general nutrition of the limb, and recently slight passive movements of the joint itself have been accomplished without any pain or inconvenience. The upper fragment is kept under complete control during these movements, no undue stress is put upon it, and it shows no sign of yielding—a condition of things which augurs well for the future mobility of the joint. It is not possible of course at so early a date to say with precision how far the motion in the limb will be completely recovered, but every possible precaution against mishap will of course be taken. His Royal Highness has left Cowes for a cruise in the Channel and will visit Portland, Plymouth, Dartmouth, and perhaps other places. It is hoped that at some of these he may obtain carriage exercise, which would prove an agreeable and beneficial change. Four of the sailors on board the *Osborne* have been thoroughly drilled as a carrying party and so perfectly do they perform their duty that there need be no apprehension of accident when they are transporting His Royal Highness ashore. In two or three weeks' time a specially-made check splint will probably be worn in which the amount of knee flexion can be exactly controlled and the lack of extension power on the part of the quadriceps extensor compensated for by a spring apparatus. In this apparatus the patient will be able to walk, at first with the assistance of crutches and later with a stick. The Prince is fully aware of the long interval which must ensue before the repair of the injury he has so unfortunately sustained is thoroughly accomplished and is quite prepared to submit to all the restrictions which the need for incessant care entails. The fortitude, good temper, and patience that he has shown under circumstances so trying are admirable, and we feel sure he possesses the sincerest good wishes and sympathy of the entire community.

THE QUALIFICATIONS OF PUBLIC ANALYSTS.

FOR many years past the Local Government Board have only approved of an appointment to the post of public analyst on condition that the person nominated supplied documentary evidence to the effect that he was properly qualified in analytical chemistry and that he possessed such microscopical and therapeutical knowledge as was obviously necessary for the purposes of an Act dealing with the sale of foods and drugs. Thus, in the absence of the possession of a qualification in medicine the candidate has always been required to supply evidence signed by some authorised person to the effect that he possesses sufficient knowledge in microscopy and therapeutics to enable him to perform the duties of a public analyst; whilst, on the other hand, no registered medical practitioner has been accepted who did not produce separate evidence of his competency in analytical chemistry. We refer to this subject on the present occasion because of the issue of a circular by the Institute of Chemistry of Great Britain and Ireland which announces in the first place that the qualifications of the Institute are accepted as satisfactory by the Local Government Board in so far as chemistry is concerned; and, in the second place, that the Institute have decided to establish an examination for their Fellows and Associates which shall afford proof that they likewise possess the necessary knowledge in therapeutics, pharmacology, and microscopy. The announcement is satisfactory, for it must clearly be an advantage to all concerned to find in one single qualification evidence of the possession of all the necessary requirements. The circular issued by the Institute does not, of course, announce that the result which they desire to attain has already been achieved; indeed, it is clear that the Local Government Board could not in advance say of an examination which does not come into existence until October next that it will meet all their requirements. But it is equally clear that if the examination conducted by the Institute in therapeutics, pharmacology, and microscopy is of the same standard as that which has obtained official sanction in regard to chemistry the certificate of having passed the additional examination is likely to be regarded as affording evidence of competency in the subjects other than chemistry; and in this way it will be a distinct advantage to Fellows and Associates of the Institute seeking the post of public analyst. With a view to this end the Institute will probably bring under the notice of the Local Government Board such evidence as to the character, scope and standard of the new examination as will enable that Board to judge whether it fully meets their requirements. But even if it does so the possession of this special certificate or diploma will in no way be the only portal to the post of public analyst. Every medical practitioner who has sufficient competency in chemistry will be equally eligible, provided his other duties do not prevent him from that systematic laboratory attendance which is essential to the due performance of the duties of a public analyst. Apart from this consideration we are of opinion that a medical training combined with a good knowledge of analytical chemistry affords the highest evidences of fitness for the post of a public analyst.

THE SMOKE NUISANCE.

WE reproduce the following sentences which appeared in an annotation on the above subject in the columns of THE LANCET of July 9th, 1898: "The nuisance has doubtless been accentuated by the fact of the Welsh strike, Welsh coal being a hard, brittle coal, which burns without much smoke. But, as we have already pointed out, the clause in the Public Health Act was obviously aimed at securing certain structural arrangements of the furnace

or fireplace which would deal with smoky coal. A deliberate evasion of the requirements of the Act is admitted, therefore, it seems to us, by those who plead in defence that the nuisance was created in consequence of the inability to get smokeless coal. In other words, now that only smoky fuel can be obtained the furnaces are found to be in fault and it has remained for the Welsh strike to bring this fact to light. ..... The electric lighting stations in the metropolis are amongst the worst offenders. We trust that we shall continue to hear of the unabated efforts of our sanitary authorities to suppress a nuisance for the continuance of which there is not a shadow of excuse." On August 4th the Metropolitan Electric Supply Company was summoned for causing a nuisance by allowing black smoke to be emitted from their chimney; also for using furnaces so constructed as not to consume their smoke, and also for using the furnaces negligently so that the smoke was not consumed. The case was adjourned to enable the magistrate, Mr. Hannay, to give a deliberate decision, the defence being the same story of being unable to get Welsh coal. After expressing the opinion that an offence had been committed this is what Mr. Hannay said: "I have no hesitation in saying that it is monstrous to urge, as has been urged in effect before me and other magistrates, that the metropolis of this country must continue smothered in smoke until the Welsh miners and their employers have settled their differences. My past experience convinces me that the smoke nuisance can be kept within reasonable bounds if the authorities only do their duty. It may cost the manufacturers something more to have their furnaces properly constructed and well attended to, but that is as nothing compared with the injury and damage caused to the general public by the reckless fouling of air which has long been going on unchecked." This is complete confirmation of the opinions which we have expressed again and again in THE LANCET and our view on the interpretation of the law upon the subject is thus emphatically endorsed by a well-known legal authority. We trust that this pronouncement will encourage our health authorities to persevere in the crusade against the wanton befoulment of London's atmosphere and lead to a permanent suppression of the intolerable nuisance.

THE STAGES AND FORMS OF SYPHILIS.

PROFESSOR J. G. ADAMI has an interesting article in the *Montreal Medical Journal* for June entitled "On the Stages and Forms of Syphilis, with more especial reference to the Hepatic Manifestations of the Disease." He commences by suggesting that it is remarkable how during past centuries syphilis has remained sharply distinguished from all other forms of human disease, constituting a class apart. He then draws attention to the fact that from the time of Ricord primary, secondary, and tertiary stages have been clearly distinguished, and not only this, but according as to whether the disease is acquired in post-natal life or has seized upon the individual while *in utero* so do we recognise two different types of the disease. With reference to these points Professor Adami lays down (1) that from analogy as from clinical history and absence of any indications of the same in sundry cases there may be an absence of the primary, cutaneous, or epithelial manifestations of syphilis; (2) that individuals may fail to present either primary or secondary symptoms which are recognisable and yet eventually develop definite tertiary lesions of the disease; and (3) that where the subject is relatively insusceptible it is possible that the disease may be limited to the primary cutaneous manifestation not followed by secondary lesions. The whole of this paper is of considerable interest, but we have only space for a brief summary. Professor Adami demonstrates that the lesions occurring in the congenital and acquired disease are identical and brought about by the same process or processes; that whether we have to deal with the disease in the secondary or in the tertiary stage the same processes are at work; and that, if we except those cases as truly tertiary in which we have to deal merely with the fibroid remains of absolute gummata and again those cases in which there is perihepatitis (which perihepatitis appears to be a complication rather than the genuine and direct result of syphilis), then we are bound to admit that the study of the liver alone would indicate that no sharp boundary line can be made out between secondary and tertiary syphilis. This is true anatomically and histologically—i.e., that there is no valid distinction to be drawn between secondary and tertiary syphilis. It may be asked, says Professor Adami, whether such a conclusion is not wholly at variance with clinical opinion and experience. Upon the face of it it is, but if the subject be looked at carefully he thinks that such a view will reconcile not a few of the divergencies existing among writers. "We have those (and they are the majority) who state that tertiary syphilis is non-infectious and those who bring forward clear examples of the production of infection five or ten years after primary inoculation of the disease. This difference can be reconciled if we agree upon the following points. 1. That under proper treatment syphilis, if not a self-limiting disease, is at least a disease which can be healed, so that many of the lesions recognised as being tertiary syphilis are truly the indications of the old healed syphilis and not signs of progressive or latent disease. 2. If the disease has not completely died out and remains latent the resistance of the tissues of the organisms is such that in the majority of cases if it does not tend to light up again there is so considerable a local reaction that the infection and consequently the spread of the process tend to remain strictly localised, and the germs (which are probably of bacillary nature) do not become disseminated through the blood. Thus neither the blood nor the secretions contain the virus. 3. In a very small number of cases, the reaction on the part of the tissues may be so lessened and the virus retain or gain so high a virulence that either it causes ulceration or in other ways becomes disseminated and capable of causing infection even later in the tertiary stage."

THE ADULTERATION OF CHAMPAGNE.

IT is at any rate a redeeming feature in these days that adulteration generally occurs in some wholesome form. For all that of course it is still a fraud, the public are swindled, but not poisoned thereby. Sophistication, in short, commonly amounts now to substitution. Margarine is an excellent food substance, but it is not butter; the potato is an excellent food also, but it should not be found in bread; and wheaten flour is good, but the fact of colouring it with turmeric does not make it mustard. Gooseberry wine, again, is an excellent beverage, but it cannot with the smallest degree of truth be called champagne, even though the name has been accepted for years by the public as a synonym for cheap champagne. We are inclined to doubt whether the gooseberry to any great extent was ever made to replace the grape in the way indicated. Lord Palmerston, it is said, once told a deputation of wine merchants who waited on him that there was never a good champagne year in France unless there was a good apple crop in Normandy. We should like to think that this was because the season which was favourable to the production of good grapes was also favourable to the production of good apples. It is also stated that many owners of large pear orchards in France are under contract to send their

entire produce to a firm of wine merchants in the champagne district. It is evident, if this be true, that a large section of the public is beguiled into regarding cider, perry, and gooseberry wine as champagne. In other words, pears, apples, and gooseberries evidently afford abundant material for making a very popular, excellent, and palatable drink. In spite of this fact people are constantly asking the question, What shall we drink? But really good cider, perry, and gooseberry wine are not easy to procure except in the immediate neighbourhood of their production, as in Herefordshire, Devonshire, Somersetshire, and Norfolk. Perhaps, then, the proper names of these estimable beverages are not high-sounding enough. Under the falsely described and tempting title of champagne, however, the public eagerly drinks, smacks its lips, and says, "An excellent wine." And thus the immoral traffic in substitution is encouraged and sustained to the enormous profit of the dealer and greatly to the detriment of the purse of the consumer. It affords another instance of the public preferring, it would seem, to go on being gulled.

LOCUM TENENTS.

THE demand for locum tenents in the present season is said to be very great. At some hospitals it has been found impossible to meet the demand. This fact accords with the testimony of many correspondents as to the difficulty of getting qualified assistants and is doubtless largely to be explained in the same way. The action of the General Medical Council in requiring all responsible medical work to be done either by the principal or by a qualified assistant has added to the value of the qualified man as a locum tenent. It has probably also added to the financial value of such functionaries. It is to be hoped that the unusual demand for locum tenents is also partly to be explained by the fact of a greater number of medical practitioners taking a reasonable holiday. It would seem that there is a considerable number of medical men who never take a real holiday. An illness or an accident may suspend their work for a few weeks, but they never take a formal holiday of any length or only at an interval of several years. When holiday-taking has become almost universal this exception is remarkable and significant. Let us hope that without going to the other extreme of restlessness, which is too common, the members of our profession will recognise the wisdom of making an annual break of at least a fortnight in the prosecution of their arduous and exacting work.

INSANITARY AREAS IN BRADFORD.

IN May, 1897, the Sanitary Committee of the Corporation of Bradford adopted a report by the sub-committee on insanitary areas in which there was a recommendation that certain districts should be dealt with under the provisions of the Housing of the Working Classes Act. The medical officer of health, Dr. W. Arnold Evans, has made a representation to the committee concerning the question to the following effect: the district contains 7 streets and parts of 4 others and the total area is 22,650 square yards. It contains 284 houses with a population of 1357, the density of population being 301 persons per acre, as against 21 persons per acre for the whole city. The death-rate from all causes in this area has been, per 1000, in 1895, 45·6; in 1896, 42·7; and in 1897, 41·2. Dr. Evans divides the area into two parts, the first of which contains Longlands-street, Long-croft-place, Garden-place, and the north-east side of Chain-street. The remainder of the area is much less insanitary and in the opinion of the medical officer can be dealt with by the improving of certain single houses. But the first-named area is too bad for this and must be dealt with by an improvement scheme. Longlands-street contains a population of 386 with an average of people per house of 5·5, the closet accommodation being very sparse; the average of people per closet is 15. The death-rate for the street in 1896 was 69·9 per 1000, but in 1897 it sank to 36·2 per 1000. In Longcroft-place live 466 people, being 4·2 persons per house; the average of persons per closet is 9·9. Five of the houses in this delectable neighbourhood are cellar dwellings, one of which is used as a muffin bakery. Garden-place and Chain-street present much the same conditions. An analysis of air gave the following results: in air from Longcroft-place on a still day with temperature 71·5° F. there were found 6·6 parts of CO_2 per 10,000; air taken from a tenement house gave 8·8 parts of CO_2 per 10,000. We have little doubt but that the Corporation of Bradford will carry out the advice given by their medical officer of health, but we hope they will take care of one thing. It is generally found that in cases of "improvement" the improved dwellings are let at rents which are far too high for the dispossessed workers to pay; consequently they herd into, if possible, still more insanitary dens than the ones from which they have been ejected. Municipal enterprise has to step in in most cases if bad is not to be made worse.

A MICRO-CHEMICAL TEST FOR PHOSPHORUS.

PROFESSOR MACALLUM, in a paper recently contributed to the Proceedings (page 467) of the Royal Society, describes a method by which the phospho-molybdate test may be used with success for the detection of phosphorus in animal and vegetable tissues. He finds that the indefinite reaction given by the direct application of the test owing to the colourless character of the phospho-molybdate precipitate when occurring in the tissues or in the presence of a reducing agent (unless that agent be carefully chosen) may be avoided by the use of phenyl-hydrazine hydrochloride as the reducing reagent, which produces a green colour whenever the phospho-molybdate precipitate has been formed. The brown colour produced by the molybdate alone does not interfere with this reaction. Tissues which have been hardened in alcohol are the best for this treatment. The preparations were washed (after treatment), dehydrated, and mounted in the usual way. The paper concludes with an account of a demonstration by means of this method of the presence or absence of phosphorus in the various cell elements of diverse animal and vegetable tissues.

FOOD PRESERVATIVES.

CONSIDERABLE contention has waged round the legality or desirability of employing preservatives in perishable articles of food and the subject naturally comes to the front during a spell of hot weather such as that which we have been experiencing for the past three weeks. There is little doubt that some means of preserving food are absolutely necessary when the prevailing conditions are such as to "turn" food in a few hours. Otherwise milk, cream, meat, &c., become unfit for consumption, unpalatable and evil-tasting. To keep the articles somewhere near freezing point is obviously impracticable on any large scale, while sterilisation is similarly beyond application. This reduces our resources to the simplest of all expedients, the addition of an antiseptic in such quantity as to preserve, at any rate for a time, the article from objectionable change and yet in minimum quantity so as not to constitute a possibly harmful amount. We think the use in limited quantities of such mild antiseptics as borax to be justified at a time like the present when otherwise a considerable amount of valuable food substances would be wasted and lost. But, as we have urged before, the fact of an article being thus preserved against change should be always notified to the consumer, and we would have limits imposed by the State as to the amount of the preservative to be used; moreover, the nature of the preservative should also be declared. In other words, we would establish a system, recognised by the State, by which under

certain circumstances the employment of preservatives with restrictions as to their nature and amount could be legalised. This is a view which we have expressed before and notably in the report of THE LANCET Special Sanitary Commission on the Use of Antiseptics in Food which was published in THE LANCET of Jan. 2nd, 1897. In that report were also embodied the views of several medical men who are accepted authorities on food questions. Quite recently we have received an important contribution on the subject by no less an authority than Professor Chittenden of Yale University. As the result of a series of very interesting experiments this physiologist reports that the results would appear to warrant the statement that in particular boric acid and borax when present in moderate quantities can have little or no deleterious effect upon the more important chemical processes of digestion. On the contrary it would appear that the presence of these agents may, in some cases at least, even accelerate the normal digestive processes of the alimentary tract. In regard to the effects of borax and boric acid on nutrition the same observer concludes that when borax is given in sufficient quantity to produce any effect its action is similar to that of common salt—i.e., it tends to increase proteid decomposition. Both borax and boric acid, he states, are without influence upon the putrefactive processes of the intestine, apparently because of their rapid absorption from the intestinal tract and quick elimination through the urine.

SERO-THERAPY IN NEOPLASMS.

AN article with this heading by M. C. Beretta appears in M. Richet's "Travaux du Laboratoire," the fourth volume of which has just been published. Two years ago MM. Richet and Héricourt communicated to the Académie des Sciences two cases which were extraordinarily successful and which seemed to show that *sometimes* cases of fibro-sarcoma might be cured, or at least benefited, by the injection of anti-cancerous serum. The mode of obtaining the serum was to reduce the cancerous tumour with antiseptic precautions to a pulp with powdered glass, to add distilled water, filter, and then by centrifugation separate the fluid into three portions, an upper layer consisting of emulsionised fat, a second layer of the cancerous juice, and a third layer of the organic débris and glass-powder employed. The juice thus obtained is an opaque, greyish-red liquid, exhibiting when examined under the microscope many more or less broken-up cells, white and red blood corpuscles, fat drops, fibrin, and a deposit of granules rich in nuclear particles. Micro-organisms are also visible which either proceed from the tumour itself or possibly from the air which has been in contact with the fluid during the manipulations. The animals used in M. Beretta's experiments have been the horse, the ass, and more particularly the dog, the cancerous juice being slowly injected into the vein of the foot in the case of the dog, into the nasal vein in that of the horse, and into the marginal vein of the ear in that of the ass. The quantity injected was in proportion to the size of the animal—from 20 to 40 c.c. in the case of the horse, from 10 to 20 c.c. in that of the ass, and from 5 to 10 c.c. in that of the dog. These inoculations were repeated from month to month, each injection being better borne than the last, as if a kind of toleration were established for the cancerous juice. At the end of a certain period the animal was bled in order to obtain the anti-cancerous serum. In the case of the horse and the ass 1 or 2 litres of blood were taken, but in the case of the dog the animal was sacrificed and the whole of its blood was collected and the serum obtained with the usual antiseptic precautions. The mode of using it was almost always by hypodermic injection at some distance from the seat of the disease. In some instances no benefit was observed, the patients became discouraged, and no further trial of the remedy was made. In other instances pain was notably diminished and the volume of the tumour underwent reduction, and it is to be observed that all the cases were taken in hand at a late period of the disease, the cachexia being well established. M. Beretta has collected no fewer than seventy-three cases, of many of which he gives the details, in which this plan of treatment has been followed by more or less success. Amongst these are cases of atrophic scirrhus of the breast, of cystic tumour of the breast, of ulcerated tumour and of cancer of the base of the tongue, of cancer of the rectum, stomach, and uterus, and of degenerated naso-pharyngeal polypus. The general results of M. Beretta's experiments and observations may be regarded from a physiological and pathological and from a clinical point of view. From the physio-pathological standpoint it would appear that anti-cancerous serum exerts a stimulating influence on the organism, rendering the circulation active and improving the general nutrition of the body. Its employment does not give rise to any special disturbance of the economy, though like all therapeutic serums it may occasion inflammatory troubles, such as redness, eruptions, painful swellings, fever, and more rarely phenomena of intolerance and toxic action. It induces at the seat of the disease a special influence accompanied by more or less lively inflammatory symptoms—which, however, are often altogether absent—which lead rapidly to softening and reduction in size of tumours and of the affected ganglions. From the very outset of these changes and as a consequence of the cessation of nervous and vascular compression, pain, spasms, œdema and hæmorrhages diminish or disappear. The functions of the body, and with this the general health, are improved. At a later period the work of reparation in ulcerated parts becomes more marked, the neoplastic outgrowths, tissue, and necrosed portions are sometimes thrown off, the aspect of wounds improves, and circulation may proceed to a considerable extent. But this anti-neoplasmic influence does not prevent new generations of specific elements from developing in opposition to the action of the serum, and this action seems to be soon exhausted, probably owing to tolerance of the cells. It is rare that the serum is wholly inoperative, but when all good effects have ceased, after an interval of some weeks a new series of injections will sometimes prove serviceable. It has not been proved up to the present time that the use of the serum after an operation can prevent a relapse, but it is a question whether it may not retard one. Anti-cancerous serum has produced similar effects in the most diverse forms of neoplastic growths. M. Beretta is not satisfied that its action is really specific, seeing that normal serum produces similar though less marked effects. From a clinical point of view it may be said that no unquestionable case of cancer in which a cure has been effected has been reported, but it is certainly useful in controlling such symptoms as pain, œdema, and hæmorrhage, in reducing the size of tumours and in improving the aspect of ulcers.

INSECT STINGS.

THE fact of death occasionally resulting from the sting of insects such as bees and wasps is no doubt largely responsible for the species of terror which the presence of these insects brings upon many persons. Only this week, for example, a case was reported of a labourer who placed in his mouth a gooseberry which proved to contain a wasp. The wasp stung him at the "root of the tongue; he went into his cottage, and medical aid was summoned, but death ensued in five minutes." In this instance, of course, death most probably supervened on suffocation due to intense swelling in the throat and was not due directly to the poison itself.

Vomiting, fainting, delirium, and stupor strongly suggest a highly virulent substance of the nature of a toxin. The precise nature of the poison of wasps and bees is not known. They possess a poison bag and sting and the fluid secreted is as clear as water, exhibits an acid reaction, and, in fact, contains formic acid. But this acid can hardly account for the severity of the symptoms sometimes following a sting. Fatal results have, indeed, occurred which could only be attributed directly to the toxic action of the sting. Some persons, however, endure the sting with impunity, others develop alarming symptoms, such as blood poisoning, and undoubtedly the toxicity of the sting depends very much upon the condition of the "soil" into which it is implanted. One of the old-fashioned remedies, and we believe a good one, is to apply immediately to the part stung the juice of a raw onion. The *rationale* of this remedy is not clear, the sulphur oil in the onion possibly serving as a palliative. The sting, at any rate, if it remains in the wound, should be extracted and the puncture dressed with a little weak ammonia and afterwards a little bromide of ammonia may be added, which frequently serves as a sedative. Judging from the great number of wasps which have somewhat suddenly appeared in the country during the recent hot weather this seasonal pest promises to be of no small dimensions. The intense irritation caused in some persons by mosquito "bites" may be promptly relieved by the application of ipecacuanha, either the "vinum" or the powdered root, made into a paste with water or vinegar, being used.

JAUNDICE IN TYPHOID FEVER.

JAUNDICE is a very rare complication of typhoid fever. Murchison saw it in only four cases, but some observers have met it more frequently; Griesinger noted it in 10 of 600 cases and Liebermeister mentions that in the Basle Hospital it occurred 26 times in 1420 cases (1 in about 55). The *American Journal of Medical Sciences* for July, 1898, contains an exhaustive paper by Dr. Da Costa, based on 5 cases observed by him and on those previously recorded, making 52 in all. Jaundice does not generally come on until the middle of, or until late in, the disease. But in one of Dr. Da Costa's cases (so far unique) it appeared during the incubation period; in a case recorded by Andral it appeared on the third day; in one by Frerich on the fifth; in one by Murchison on the sixth day of a relapse; in one by Osler on the fourth day of a relapse; and in one by Sorel during convalescence. The stools are much like the ordinary typhoid or darker and greenish, very rarely clay-coloured. The liver is usually tender, especially at its lower border, and may be slightly enlarged. Parotitis has been observed in a number of cases and is not a mere coincidence, which bears out Mr. Stephen Paget's doctrine of a connexion between parotitis and abdominal disease. The liver when carefully examined shows granular or fatty degeneration; sometimes there is abscess (but typhoid abscess is not usually accompanied by jaundice); and sometimes there is pylephlebitis. The jaundice is usually of the toxæmic form and seldom depends on catarrhal obstruction (in the ordinary sense of the term). The prognosis is grave: 33 deaths occurred in the 52 cases. Atrophic cirrhosis was a sequel in one case. Hölscher's statistics of 2000 fatal cases of typhoid fever at the Munich Pathological Institute are instructive. Of 227 in which the liver or gall-bladder were involved there were 203 cases of disease of liver structure, 12 of abscess, 3 of acute yellow atrophy, 1 of amyloid degeneration, 5 of diphtheritic process or suppuration in the gall-bladder, 3 of œdema of the gall-bladder, while 22 are classed simply as jaundice without organic disease. The ordinary parenchymatous changes, not to be recognised clinically, presumably are represented by the 203 cases. Of 22 cases of typhoid abscess of the liver collected by Da Costa only 7 had jaundice. In typhoid fever[1] disease of the gall-bladder is more common than disease of the liver. Jaundice is not a frequent symptom in cholecystitis; it is mentioned in 17 out of 58 cases.

DRINK-FETCHING BY CHILDREN.

AT a recent meeting of the Manchester city justices it was stated by the chairman of the licensing committee that where extensions of premises were made the committee had for several years stipulated that the drinking accommodation should not be increased and that a "private apartment" should be provided for children sent for their parents' drink, "so that they would not see and hear what was going on in other parts of the house." As drinking habits are in many cases acquired very early in life, and as the temptation to sip a little of the beverage which their parents find so indispensable is to many of the children irresistible, perhaps the magistrates will see that some one accompanies them from the public house to their homes so as to guard them from this danger. Some of the publicans who give sweets and presents to the beer-fetching children might spend their money in this more truly benevolent fashion.

PALPATION OF THE KIDNEY.

THE accessibility of the kidney to palpation is discussed at considerable length by Dr. Wolf Becher and Dr. Rudolf Lennhoff in the *Deutsche Medicinische Wochenschrift* of August 11th. They commence with the remark that during the last fifteen years it has been recognised that the kidney may occasionally follow the rise and fall of the diaphragm during respiration and may in this way admit of palpation without the case being one of moveable kidney in the ordinary sense. An exhibition, including a party of 24 Samoan women, visited Berlin in October, 1895, and afforded an opportunity for the investigation of the question whether any considerable influence on the position and displacement of the kidneys of females was brought about by the wearing of stays and the use of waist-bands for the support of the skirts. Almost all these Samoans had finely-developed figures. Their height varied from 57 in. to 70 in., the average being 65 in.; their chest measurement close under the armpits during expiration varied from 32 in. to 38 in., the average being 35 in.; their ages were from thirteen to twenty-six years. Their clothing consisted of a jacket and apron, which were fastened without any constriction of the waist; none of them had ever worn stays. In 6 of these 24 women the right kidney could be felt; 2 of the 6 had had one child each; in none of them had the kidney any passive motion apart from the respiratory displacement. It is therefore evident that the kidney may admit of palpation and may follow the respiratory movements quite independently of the habitual constriction of the waist by clothing. Of the other women 2 had had one child each and a third had had three children; their abdominal walls were very relaxed but their kidneys could not be felt. From observations made on hundreds of cases in Dr. Litten's poliklinik Dr. Becher and Dr. Lennhoff have come to the conclusion that palpation of the kidney is feasible much more frequently than used to be supposed, and that it is possible before examination, merely from inspection of the shape and conformation of the individual, to predict with a considerable approach to accuracy whether the kidney is accessible to palpation or not. The persons whose kidneys may be felt have usually a slender, graceful figure, long, narrow thorax, and a somewhat flattened, laterally retracted abdomen. Dr. Becher and Dr. Lennhoff

[1] THE LANCET, July 9th, 1898.

also devised the following formula for the purpose of obtaining numerical expressions: the length from the supra-sternal notch to the upper border of the symphysis pubis is divided by the shortest girth of the waist and the quotient is multiplied by 100. In the 24 Samoan women this number averaged 75; for the 6 whose kidneys could be felt it was respectively, 69, 75, 78, 83, 83, and 91; while for the 18 whose kidneys could not be felt it averaged 73. With German women it was usually found that if the number was 77 or upwards the kidneys could be felt, but if it was less than 77 they could not be felt.

PHARMACOLOGY AT CAMBRIDGE UNIVERSITY.

CONSIDERING the few years that have elapsed since the Pharmacological Laboratory at Cambridge was established it may be congratuated on its success. In the main this is due to the investigations of Professor Bradbury and his assistant, Mr. Marshall; but the teaching in this department also seems likely to contribute to its reputation as a school. Thus one of the two gold medals awarded by the University of Edinburgh this year for the M.D. theses has been secured by Dr. Andrew Balfour for work done in the laboratory and the gold medal and exhibition at the Intermediate (M.B.) Examination of the University of London has been won by Mr. Arthur Eastwood, also a student in this department. As the teaching of pharmacology in England compared with that of some of its sister sciences is at a low ebb it is a pleasure to record successes of this kind from so youthful a department as that at Cambridge.

THE TREATMENT OF ELEPHANTIASIS BY ELECTRICITY.

IN *La France Médicale* of June 24th, 1898, Dr. Albert Weil has published a case of elephantiasis in which a remarkable result was obtained by galvanism. An obese washerwoman suffered from extreme elephantiasis of the legs which had developed gradually during twenty-seven years. The circumference of the left leg measured 57 centimetres and of the right leg 55 centimetres and the patient weighed 128 kilogrammes. Bandages were used, but without effect. A constant current to the left leg was then tried. Two metallic electrodes covered with chamois-leather measuring 16 by 26 centimetres bent into half cylinders were applied to the leg so as to cover more than the lower half, and connected with the negative pole of a battery. The positive electrode, which was 10 by 26 centimetres, was placed on the nape of the neck. A current of 20 milliampères was passed for a quarter of an hour and the leg was then compressed with a bandage. The right leg was similarly bandaged. This treatment was repeated at intervals of two or three days with currents ranging up to 50 or 60 milliampères. On the fifth day the left leg measured 54 centimetres, on the twelfth 53 centimetres, on the seventeenth 50 centimetres, and on the thirty-third 45 centimetres, when elastic bandages were substituted for the cotton ones and applied to both legs. In a fortnight the left leg measured 40 centimetres and the right 54 centimetres (a slight diminution). A constant current was then applied to both. After twelve days the measurements were 38 centimetres and 50 centimetres. Finally they were reduced to 38 centimetres and 40 centimetres, and the patient could walk and, except for some slight swelling at the external part of the ankles, was practically cured. Electricity in the treatment of elephantiasis has been recommended by several writers especially and in repeated publications by two Brazilian medical men—Silva da Aranjo and Moncorvo. But its use has not become general. Elastic bandages often give brilliant results. Though Dr. Weil appears to have produced quite cogent evidence of the value of electricity in his case it would have been more satisfactory if he had employed elastic bandages before resorting to that treatment. His explanation of its mode of action is that it facilitates the movement of lymph by exciting contractions of the lymphatic vessels. The interrupted current, which would seem more effectual than the constant for this purpose, is recommended (in addition to the latter) by the Brazilian writers, but for some reasons it was not employed by Dr. Weil.

PLUMBERS IN CONGRESS.

AT Glasgow on Aug. 18th the corporation entertained some 300 members of the Association for the National Registration of Plumbers on the occasion of the ninth annual Scottish Congress. In addition there were present several Members of Parliament, medical officers of health, and representatives of various sanitary and municipal authorities interested in the subject of sanitation. Ex-Bailie Crawford, D.L., President of the Congress, made in his address a startling statement, but one which, it is to be feared, was by no means exaggerated. As an argument in favour of the registration of plumbers he stated that during his chairmanship of the health committee of Glasgow the percentage of cases in which plumbing work when tested was found to be satisfactory was very small. As a matter of fact, from 60 to 70 per cent. of the cases tested were found to be in some way defective, although he did not attribute these defects in all cases to the faulty work of the plumber. He commended the work done by the Association for the National Registration of Plumbers since its foundation in 1884, and thought that the operatives had been stimulated to a higher sense of their responsibilities by the improved opportunities existing for technical education. He deplored that Parliament had not yet been able to give the effect of law to the Plumbers' Registration Bill which had for its object not only the legalisation of the diploma and title, but granted the necessary power for discipline in the cases of those who committed acts unworthy of the craft.

INTESTINAL TUBERCULOSIS.

THE *Journal of the American Medical Association* of June 4th, 1898, contains an important paper on the above subject by Dr. N. Senn, whose name is so well known in connexion with abdominal surgery. The knowledge acquired in the practice of this comparatively recently developed branch of surgery has thrown considerable light on the pathology of abdominal diseases. Intestinal tuberculosis is not often found as a primary disease. In 1000 necropsies on tuberculous subjects at the Munich Pathological Institute only one case was observed, whilst there were 566 secondary cases. Tuberculosis of the stomach usually occurs in connexion with disease of the intestines and lymphatic glands. It is rare; Letorey states in his thesis that he could find only 21 cases. The destructive action of the gastric juice on the bacillus protects the stomach against invasion. Intestinal tuberculosis pursues a more benign and chronic course in adults than in children. The lower portion of the ileum and the ileo-cæcal region are the most frequently affected. A number of cases of hernial tuberculosis have been reported. In 13 cases the sac was attacked 10 times and in 7 it was alone the seat of the disease. Hernial tuberculosis may be primary; generally, however, it is associated with peritonitis. Intestinal tuberculosis may run its course without any symptoms pointing to the alimentary canal. Thus an isolated lesion may cause no symptoms until perforation occurs. Of this a remarkable case is related by Baumgarten. A young soldier in almost perfect health died suddenly from perforative peritonitis. The necropsy revealed a solitary tuberculous ulcer of the size of a penny in

the lower ileum and no evidence of tuberculosis in any other organ. Clinically this case is exactly parallel to cases of perforation in ambulatory or latent typhoid fever. In other cases the symptoms are misleading; thus one case assumed all the features of pernicious anæmia. In primary intestinal tuberculosis the symptoms are insidious and are usually mistaken for intestinal catarrh, but the presence of traces of blood in the stools should arouse suspicion. The healing of an ulcer of considerable size is usually announced by symptoms of chronic intestinal obstruction caused by the resulting stenosis. The formation of a chronic abscess in the ileo-cæcal region or in any part of the abdominal wall in connexion with intestinal symptoms of long standing always suggests the probable existence of tuberculous intestinal ulcer.

THE TREATMENT OF INFANTILE OPHTHALMIA.

DR. P. BAR, in a paper quoted by the *Journal de Clinique et de Thérapeutique Infantiles* of August 18th, 1898, discusses briefly the various modes of treatment which have been employed for the prevention of infantile ophthalmia. The writer's experience of iodoform dusted on the conjunctiva has not been more fortunate than that of other surgeons. Neither has he found that the use of boric solution, or even of perchloride of mercury from 1 in 1000 to 1 in 4000, is entirely satisfactory. The only remedy which he considers to be truly reliable is the time-honoured solution of nitrate of silver, and the mode of its employment by him, though not novel, is sufficiently unusual to merit a passing comment. The strength of the solution, 1 per cent., is somewhat weaker than that commonly advised and we are pleased to find that it is administered by instillation. This method, it is stated, has yielded excellent results and the statement, we believe, is justified by the experience of other practitioners besides the writer of the paper above mentioned. It possesses this great advantage over the more common practice of brushing a stronger solution over the conjunctiva—that it avoids an obvious cause of local irritation, and we believe the results obtained by the drop method will be found to be, at all events in cases taken reasonably early, not only more successful but more rapidly attained. Dr. Bar advises the routine use of the nitrate solution as a prophylactic for all newly-born infants. This is certainly suggestive of *nimia diligentia*, but as regards the value of this treatment for infantile ophthalmia in its early stage there can be no question.

THE REPORT UPON IRISH PRISONS.

THE twentieth report of the General Prisons Board for Ireland has just been published. With regard to local prisons, the number of committals for 1897 is 34,911 as against 32,916 for 1896. The number of local prisons has been reduced by one owing to the closing of Grangegorman Female Prison in August, 1897, and the prison has been utilised as a temporary lunatic asylum to relieve the overcrowded condition of the Richmond Lunatic Asylum. As regards juvenile prisoners there has been a slight increase over the numbers for 1896—i.e., 221 as against 207—but a decrease as compared with 1895, when the numbers were 257. During the year there were 81 cases of insanity; of these 59 were insane on admission and 4 were sane while in prison but were found to have been insane when the offences they were convicted of had been committed; only 8 became insane while in confinement. In convict prisons there were in custody on Dec. 31st, 1897, 311. Since the years 1883–1884 the number of convicts has been reduced by one-half. It has, we are glad to see, been arranged that Irish military convicts convicted outside the United Kingdom should serve their sentences in Ireland so that they will not be deprived of the privilege of visits from their relatives and friends. With regard to the employment of prisoners the most satisfactory form seems to be garden work, and this is specially undertaken at Belfast, Maryborough and Tralee. Other employments are washing for certain barracks and the Dublin Police and making mail-bags for the Post Office. The Prisons Board are "glad to be able to state that no unproductive mechanical employments, such as the treadmill or the crank, are in use in Irish prisons." This is a point upon which the Board is much to be congratulated. The various reports of the medical officers of the different prisons show nothing very noteworthy except that the sanitary condition of the prisons seems remarkably good. In both local and convict prisons there were only 9 deaths among prisoners during the year 1897.

THE second meeting of the Congress of Gynæcology, Obstetrics, and Pædiatrics will be held at Marseilles on Oct. 8th, 1898. Medical men who wish to read papers or to bring communications before the Congress are requested to send in their names with the subjects of their communications to the general secretary, Dr. Queirel, 20, Rue Grignan, Marseilles.

ON Saturday last, August 20th, Princess Henry of Battenberg, the President of the Victoria Society for Nursing the Sick Poor, attended a meeting at Gosport in support of the society, which was founded as a memorial of the Queen's Diamond Jubilee.

THE REPORT FOR 1897 OF HER MAJESTY'S CHIEF INSPECTOR OF FACTORIES.

THIS report, the receipt of which we acknowledged last week, is one of the most important publications which have issued from the Home Office for a considerable period. At the present time more than ordinary interest attaches to the chief questions dealt with in this report because of the radical and far-reaching changes in the conditions of factory labour which have been brought about by the exceptional and to some extent experimental legislation of the last few years. The Factory and Workshops Act of 1895 and perhaps in a greater degree the Workmen's Compensation Act of last year may be said to have revolutionised the relations of employers and employed in factories and workshops, and it is unquestionably true that many well-informed and experienced employers of labour in this country who are by no means indifferent to the health and safety of their employés are of opinion that unless the utmost vigilance be exercised the tendency of recent legislation, especially of that conceived on the lines of the statute last mentioned, will be to gradually but surely alienate from the factory and workshop interest a great part of the capital which is essential to success and thus in the long run to deprive, *pro tanto*, the industrial classes themselves of the very means of subsistence. The present report is from the pen of Dr. Arthur Whitelegge, who for many years before his promotion to the Chief Inspectorship of Factories was well known as an accomplished sanitarian. His long and exemplary administration of the vast area of the Yorkshire West Riding doubtless marked him out as being pre-eminently fitted to direct the factory system of the country from the point of view of the sanitary reformer. But even a superficial reading of this elaborate and careful report will suffice to show that whilst the real hygienic requirements of the factory and workshop will, under Dr. Whitelegge's guidance, be adequately and judiciously provided for, at the same time the interests of the employers of labour will not be allowed to suffer from the imposition of untried and costly experiments, although these may be clamoured for by ignorant faddists who assume to represent the interests of the workpeople.

Some idea of the amount of work done by the Factory Department may be gathered from the fact that no fewer than 200,000 factories and workshops came under inspection

during a single year. Among the operatives in these establishments—four and a half millions in number—there occurred in the year 1897 as many as 40,000 accidents and 1200 cases of poisoning by lead. In the report under notice particulars are given of the nature of the accidents occurring and of the trade processes in which accidents are most frequent. A large proportion of the injuries, however, appear to be of but trifling severity and many of them are shown on inquiry to be exclusively due to carelessness on the part of the workers themselves. For example, we notice the case of a boy who was badly burnt by gunpowder in a factory, not while at work, but during the dinner hour when he was celebrating the 5th of November. Another case was that of a man who was severely bitten by a horse whilst working in a dock; and a third that of a dock-labourer who was injured by the overturning of a hansom cab. A very large proportion of the accidents recorded appear to be caused by the stupid practice of cleaning machinery whilst still in motion, and this notwithstanding the prohibition of the practice by authority. For instance, a boy is reported to have lost part of his hand by being caught in the gearing of a shoe-making machine. He began to clean the machine before it had come to a standstill because he wished to gain time to try a bicycle. Another boy had his hand severely lacerated whilst cleaning a leather-cutting machine in motion; this boy wished to get his cleaning done in order to attend a football match. It is obvious that no precautions by the proprietors can avail against foolhardiness such as this. In consequence of the representations of the inspectors the exposed and dangerous portions of machinery in factories are now being more and more effectually fenced. This has doubtless been brought about by the heavy responsibility incurred by owners under the Workmen's Compensation Act. In one case, where the instructions of the inspector to provide suitable fencing for a lathe had been disregarded and a boy had been badly lacerated in consequence the owner was fined £10, and that sum was, by order of the Secretary of State, paid over to the injured lad. According to the evidence of one of Her Majesty's inspectors, Mr. Tinker, it is probable that the Act first mentioned will indirectly cause a material reduction in the number of preventible accidents, since the use of precautions such as the fencing and guarding of dangerous machinery will ultimately affect the rates of accident insurance. Dr. Whitelegge remarks, on the strength of evidence supplied by various medical officers of health, that increased attention is now being paid by local authorities to the sanitary condition of factories and workshops. He quotes as specially worthy of imitation the action of a large manufacturing firm in Cardiff, who have issued a notice forbidding any of their workpeople in whose house a case of infectious disease exists to return to work until the medical officer of health permits them so to do. The firm urge upon their employés the advisability of promptly sending infected members of their families to the borough sanatorium, and if they comply with this advice the firm undertake to pay the wages of any employé who is kept away from work pending the disinfection of his house. Dr. Whitelegge gives important information which we can only notice briefly regarding the prevalence of lead, phosphorus, and arsenic poisoning and of anthrax in factories and workshops. The figures under this head compare unfavourably with those of 1896 and there is reason to fear that the numbers would be still larger if all the cases were known. Steps are being taken, by advertisement and otherwise, to call the attention of medical men throughout the country to their statutory duty of notifying all cases of this kind which occur in factories and workshops. At page 49 a list is given of the trade processes in which poisoning by lead, phosphorus, or arsenic is most likely to occur; from the two latter the cases of poisoning reported are but few in number at present. There was a great increase in the reported cases of lead-poisoning in 1897 as compared with the previous year, the increase being common to all the industries included in the list. Speaking of the dangers (including lead poisoning) incidental to the potter's or earthenware manufacturer's occupation Dr. Whitelegge says that during the last few years there has been a material improvement in "dust conditions" which may be expected to produce an effect upon the records of fatal phthisis and other diseases of the lungs. But of lead-poisoning, unfortunately, the same cannot be said, the number of grave cases reported, and particularly of cases of blindness, having ominously increased of late. Full investigation of the subject is now being made, with a view to better measures of prevention, and in this the Secretary of State has secured the assistance of Dr. Thorpe, F.R.S., the principal of the Government Laboratory, and of Dr. Thomas Oliver.

The reported cases of anthrax increased from 17 in 1896 to 23 in 1897. 14 of these were connected with the handling of hides and skins and 9 with wool-sorting. The former industry has now been certified as a dangerous trade by the Secretary of State. Special rules for wool-sorting have been served upon the occupiers of all works in which the sorting of the dangerous kinds of wool and hair is carried on.

A special feature of the present report is the prominence which is given to the work of Her Majesty's lady inspectors of factories, whose reports to the Chief Inspector are in many cases of unquestionable merit; they occupy a considerable portion of the volume. There seems to be great difficulty in controlling the employment of women in factories within a limited period after childbirth. There is considerable danger, according to the inspectors, that the section of the Act of 1891 dealing with this question, which is of such great importance to the rising generation of workpeople, will remain a dead letter because of the difficulty of proving the employer's knowledge of all the circumstances. It is suggested that the production of a medical certificate of fitness for employment in a factory should be made a condition of employment or of re-employment of any woman after confinement. An illustration is given in the report of the need of protecting witnesses from the intimidation, direct or indirect, of those who employ them. Hardly any infringement of the Factory Acts is more difficult to discover or proceed against than the employment of a woman within four weeks of her confinement, chiefly owing to the burden of proof resting with the inspector as to the employer's knowledge of the facts. In one case, the particulars of which are given in full, an unfortunate woman who had been employed within the prescribed period of her confinement was dismissed from her employment because she was called as a witness in her own case by Her Majesty's inspector. Happily, the poor woman obtained re-employment from one of the magistrates who heard the case and so her personal difficulties were surmounted for the time. This would do little or nothing, however, to counteract the effect on the worker's mind of the conduct of the employer, who by dismissing her showed his contempt for the law and indicated plainly the course he was likely to pursue in future with respect to any worker who admitted facts as to infringements of the statute to one of Her Majesty's inspectors. The new Truck Act of 1896 has added much to the work of the factory inspectors, bearing as it does upon all factories and workshops and upon all employers in the United Kingdom, and raising many complex questions which the inspectors are called upon to decide. In order to make clear to both masters and men the requirements of the Truck Acts, which were at first misunderstood, explanatory memoranda have been prepared and issued by the Home Office with good effect. Several flagrant cases of violation of the Truck Acts are mentioned in the report, in most of which convictions were obtained. In one case, a tailor, who was forcing his workers to spend nearly all their earnings in his own grocery store, was fined £10 and costs. In a second, a large bootmaker was charging his workmen an exorbitant price for materials and compelling them to buy more than they needed; he was fined £5 and costs. In another case, a grocer, acting as agent for a glove manufacturer, gave out gloves to be sewn and paid for the work in groceries, which the people had sometimes to sell again in order to obtain money for other necessaries. Armed with powers under the new Act the inspectors have been able to put a stop to many of these cruel extortions, which have now become for the first time apparent under the compulsory publicity which the Act demands.

TYPHOID FEVER IN BELFAST.

AT a meeting of the Public Health Committee of the Corporation of Belfast held on August 18th a very serious state of affairs was reported by the medical officer of health in reference to the prevalence of typhoid fever, for during the week ending August 13th 198 cases of zymotic disease were notified, and of these 143 were typhoid fever. The only

comforting piece of intelligence in this most serious aspect of affairs is that the number of cases of infectious disease is 52 less than in the preceding week. There are over 200 cases of typhoid fever in the Union Fever Hospital and several members of the Fire Brigade have been attacked, due, it is said, in their case to eating cockles purchased from a hawker who had obtained them from the shores of Belfast Lough, which are polluted with sewage matter. It is a most noteworthy but sadly deplorable fact that a new city like Belfast is a hotbed of typhoid fever, the most preventable of the zymotic diseases, and the citizens must have read with sincere chagrin the fact noted in Sir Charles Cameron's presidential address at the Congress on Public Health in Dublin that while the mortality caused by typhoid fever is greater in Dublin than in nearly every other town in the United Kingdom, in Ireland Belfast alone has a higher death-rate from this disease. Belfast has now a new corporation, the great majority of the members of which when candidates for municipal honours placed the sanitation plank in a prominent position in their election platform; but so far nothing has been done to grapple in the least degree with the causes of the wide prevalence of a disease which every student of medicine is taught should be preventable. Before matters can be put right the causes of the prevalence of typhoid fever in Belfast must be known, and they may be placed under the following heads: 1. The long-continued pollution of the soil which the authorities allowed in spite of constant warning by permitting up to quite recently all over Belfast notices—"Rubbish may be shot here." Houses have been erected on such "made soils" without the least attempt to disinfect the material of the foundations. Hence, like Dublin, the soil of Belfast is full of the germs of typhoid fever. 2. Defective house drains, allowing pollution of soil by escape of sewage matter. It is found that this mischief generally occurs in the drains (in the yard) between the houses and the main city sewers. These pipes are sometimes only cemented on the top and sides, the lower part resting on the ground being untouched and so allowing leakage. Again, it has in Belfast unfortunately been a custom to allow the joints of these pipes to be made often with clay, which after a time washes out and so sewage escapes. The clay is used because it is cheap, a good example of the "penny-wise and pound-foolish" principle. Then too often in the "jerry" houses drain-joints are made, not as they should be by skilled men, but by those who are called "handy" men or labourers. A leading citizen of Belfast, in a letter to one of the daily newspapers of that city, says as a result of his most unfortunate experience with several houses in Belfast (and he relates a number of examples): "I would not allow any drain-pipes to be covered in without being tested by smoke and water in my own presence." 3. It often happens that in the poorer districts if there is a case of typhoid fever in a house all the dejecta are thrown into the ashpit, which is generally open and near bedroom windows. In this way the poison is wafted about and other persons become affected. It is said there are 20,000 houses of this type in Belfast, and as many of them have no back passages the horrible nuisance of the contents of such ashpits being carried through the house and out at the front-door (this being the only passage) can easily be imagined. 4. If the street gullies are to be effective the traps must be kept full of water. This during the present hot weather is not done and hence the water evaporates and the traps become open ventilators from the sewers. Anyone walking through Belfast must have in the present weather perceived horrible odours constantly emanating from the sewers through these dry traps. 5. As a result of the present main-drainage system of Belfast the whole of the sewage is emptied a short distance down the Lough, and, owing to the tidal currents, a great deal of it is spread over the sloblands on both sides of the Lough. During the present summer, to railway travellers on either side of the Lough the stench at many places is simply horrible, and as northerly winds have been blowing very often of late from these perfect culture grounds (pathologically speaking) towards the city germs of disease may in this way be carried to the inhabitants.

A few of the causes of the prevalence of typhoid fever in Belfast have been mentioned. Every thoughtful citizen is asking what is to be done. Some are crying out (and rightly so) against jerry-building and jerry-plumbing, but if the medical profession were to be asked their opinion they would say at once: remodel the whole public health department of the city and appoint a really sufficient staff, as it is at present altogether under-manned. Let the heads of that department tell the corporation plainly that the present cheap way of carrying on the health department must cease and that as much money must be spent in the care of the health of the citizens of Belfast as is done in other places. Let them point out clearly and fully what is done in Glasgow, in Birmingham, and in Edinburgh, and we are fully confident that the citizens of Belfast will support them and that the scandalous state of affairs at present existing (we mean the fact that a new city such as Belfast has a death-rate from a preventable disease like typhoid fever the largest in the United Kingdom) will cease for ever. Belfast has one of the finest tram systems in the world; it has (and all thanks to the corporation) one of the finest fire brigade systems in the world; why, then, does it lag behind all other cities in its care of the public health? These remarks are no whit too strong for the state of matters, and the results are well seen in a telegram from our Belfast correspondent dated August 24th. He says: "100 new cases of typhoid fever were admitted last week into the Union Fever Hospital and the total number of typhoid fever cases there is 307. No more cases can be admitted before additional accommodation is provided, and the board of guardians has decided to employ additional medical men and nurses. At a special meeting of the Public Health Committee held on August 23rd it was decided that Dr. Lorrain Smith should conduct a bacteriological investigation into the causes of the epidemic. The citizens were advised to boil all water and milk."

THE HOSPITAL REFORM ASSOCIATION AT EDINBURGH.

IN THE LANCET of July 30th we gave a short *résumé* of the proceedings at the meeting of the Hospital Reform Association which was held at Edinburgh on the morning of July 26th. We now supply our readers with an abstract of the various papers read and some figures concerning hospitals and dispensaries in Scotland.

MR. GARRETT HORDER (the President), in his opening address, after a few introductory remarks, said: To those who are anxious to make themselves acquainted with what has been done for reform in the past I would refer them to the report of the proceedings of the Ethical Section which met for the first and apparently for the last time in the border city of Carlisle. As far as I can learn there has been no attempt at any time to deal with the Hospital Reform question in any of the Scotch towns. In Glasgow there are several medical men who have written on the subject, but beyond a series of articles in THE LANCET I have not heard of any systematic attempt to bring about a more desirable condition of things. You will have noticed that we are desirous of effecting three objects—viz., (1) the prevention of abuse of hospitals and dispensaries; (2) the formation of central hospital boards; and (3) the promotion of provident dispensaries. That medical charities are abused, and abused to a large extent, no one who has looked into the question can have any doubt whatever. From an educational point of view (and this is naturally of the highest importance in such a city as Edinburgh) the massing together of such large numbers of patients is not likely to lead to the advancement of medical knowledge. The medical officers have not the proper amount of time to teach the students and the students themselves become too wearied to derive much benefit from the clinical remarks of the medical officers. For educational purposes it is distinctly beneficial to limit the number of out-patients to be seen by each medical officer. Moreover, the herding together of large masses of peoples in rooms for many hours at a stretch must be condemned not only from a medical but from a sanitary point of view. Neither is this indiscriminate system fair either to the hospital subscribers or to the medical profession. Looking at the subject from an ethical point of view I would ask those who have had experience in dealing with the poor whether this indiscriminate medical relief is not likely to produce a loss of independence amongst the working classes and ultimately to tend towards pauperising them. It is perfectly evident that the managers of hospitals are too fond of boasting of the large number of people who patronise their institutions and I imagine that this is done mainly because of the difficulty experienced in

raising sufficient money to support their establishments. Surely the time has arrived when the managers in our big towns should meet together and see whether some measures cannot be adopted to bring about a common understanding. In your large cities there would, I imagine, be little difficulty in effecting a closer relationship between all the medical charities than now exists; in a word, forming central hospital boards. May I be allowed to congratulate you that in this city and also in the city of Glasgow you have as managers of your Royal Infirmaries men representing in an official capacity the learned professions, the commerce, and the town authorities? With such able representatives it would be comparatively an easy matter to bring about a conference at which the whole subject could be threshed out to the satisfaction not only of the hospitals but of the sick and suffering poor. You may well ask what our ideal out-patient department is; it is briefly this, a place where persons who have been in-patients and who still require further treatment can obtain it, and also a place where general practitioners could either bring or send patients suffering from obscure or difficult diseases for the purposes of consultation. We feel that there should be a much closer intimacy between the hospital staff and the general practitioners than now exists. And now to come to the question of your system in Scotland. I have prepared a table showing the hospitals and dispensaries in the 8 principal towns, together with the number of in- and out- (or dispensary) patients attending during the year 1897. As these figures have been chiefly compiled from the reports you may I think, consider them as approximately correct. In several instances the figures refer to the year 1896, because the reports of last year had not reached me. I want you to clearly understand that the numbers referring to the out or dispensary patients are actually the number of patients and not the number of attendances made by them. [The tables showed the following results: Glasgow with 18 institutions giving medical relief, exclusive of the Barony (Parish) Hospital and the City Fever Hospital, has in-patients, 20,863, and out-patients, 78,302. Edinburgh with 23 institutions, 2 of which sent in no returns, has in-patients, 14,763; and out-patients, 109,141. Leith with 1 institution has in-patients, 1152; and out-patients, 18,312. Dundee with 3 institutions, 1 sending no return, has in-patients, 2687; and out-patients, 18,516. Aberdeen with 6 institutions has, in-patients, 3006; and out-patients, 19,384. Paisley with 2 institutions has, in-patients, 1086; and out-patients, 10,258. Greenock, 2 institutions, in-patients 1455; out-patients, 12,217. Perth, 1 institution, in-patients, 1163; out-patients, 1236. Mr. Garrett Horder continued:] I know that some patients come to your hospitals from places outside. But even allowing a deduction of 20 per cent. for such patients you will see that the figures remain very large indeed. And in passing I should like to make a remark about patients coming from a distance. It is flattering, no doubt, to the managers and to the medical staff to find their institutions patronised by strangers to the district, but is it quite fair to the subscribers to be called upon to pay for the treatment of people who reside in places so far distant from Edinburgh as Carlisle, South Shields, Sunderland, London, Newcastle, Birmingham, Middlesborough, Liverpool, Sheffield, and Leeds? One would naturally have thought that there are hospitals in those towns where diseases could be treated quite as effectually as they could in the Royal Infirmary of Edinburgh. This is an important point, as I notice during last year no fewer than 295 of the in-patients belonged to places outside Scotland. With regard to the administration of your hospitals as compared with those of England the chief points of difference seem to me to be as follows: in Scotland the out-patients are called dispensary patients and with few exceptions receive medicines and advice as they do in England. In the Edinburgh Royal Infirmary, in the Chalmers Hospital, and in the Ayr County Hospital only advice is supplied to such patients. I notice also that in many of your dispensaries a large number of vaccinations are performed. Apparently this seems an injustice to the general practitioners and to the Poor-law medical officers. I say apparently, because I am not sure whether any fees are received for such vaccinations. Touching on the question of provident dispensaries I can only find evidence of the existence of one in the whole of Scotland—the Edinburgh Provident Dispensary. It is gratifying to note that that one is very successful, having a membership of over 8000. There is just one point about that institution which is worth recording and that is that it has medical officers for the treatment of special diseases. I have given some attention to the subject of provident dispensaries lately and I have come to the conclusion that if we are desirous of seeing a greater number established we shall have to take steps to see them more fully equipped than they are at present. It is generally acknowledged that the special hospitals and the special departments of general hospitals are more abused than any other; and I think much could be done to lessen that abuse by attaching to provident dispensaries a certain number of specialists so that people would have no reasonable excuse for seeking gratuitous aid when they were in a position to pay something for it. I have occupied so much of your time that I cannot afford to dwell on the subject of provident dispensaries generally. I will content myself by saying that if the following regulations are adopted by the managers it is probable that the institutions would be more cordially supported by the profession at large than they are at present: (1) the adoption of a wage-limit and effective means to see that that wage-limit is adhered to; (2) the representation of the medical officers on the committee of management; (3) the prohibition of all canvassing for members; (4) the periodical revision of the list of members; (5) the placing of all medical men who wish it on the medical staff; and (6) the more economical administration: that is, with respect to establishment charges, official salaries, &c.

The Medical Control of Medical Charities.

Dr. DAVID WALSH read a paper under the above title After stating that various inquiries had been made into the question of the abuse of medical charities which had proved that such abuse does exist, to the detriment of medical men, he continued: The truth or otherwise of the allegation, however, does not materially affect the main proposition here advanced—namely, that medical men are entitled to a voice in the management of medical charities. In spite of the above-mentioned consensus of opinion nothing has been done, except in a few trifling instances, to abate the evil. The need of action has long been admitted on all hands; the question is how to bring the requisite leverage to bear upon the charities. What are the facts of the case as regards the executive management of the charities? In most cases they are under the control of laymen, who may or may not appoint a small proportion of the medical staff as *ex-officio* members of the governing committee—that is to say, the medical element, small as it is, does not represent the main mass of the profession, but individuals who, however honourable and distinguished, belong to a body whose interests are those of a section untouched by hospital competition. So that, as a matter of impartial statement, the charity that depends on the gratuitous services of the medical profession for its existence is managed by a body of persons who are out of touch with the wants, wishes, interests, and aspirations of the profession chiefly and vitally involved. The public is doubtless in sympathy with medical men and so are the lay committees, but they fail to realise the strictly utilitarian conditions under which the profession has to be followed. Humanitarianism is not allowed to interfere with the internal usages of other professions. For instance, imagine for a moment a charitable body for dispensing gratuitous law to needy folk and having organised such a body to demand that its executive should contain no lawyers. The absurdity and injustice of such an arrangement would be self-apparent, yet the cases of law and medicine, which are both necessities of civilised life, are to a great extent analogous and comparable. Obviously one remedy is to have on the executive of our medical charities medical men who can insist upon a fair and proper treatment of the general practitioner. By a well-considered scheme for securing such representation throughout the country it is likely that more practical good would be effected than by a generation of discontented and abstract discussion. If there be justice in the cry against the abuses of the out-patient departments of the hospitals what reasonable objection could be raised against the representation on the executive of the persons most closely affected by such abuses? The good that could be effected by such an arrangement has recently been fully illustrated in a hospital at Tottenham, where certain practices had crept in of a nature injurious and objectionable to the medical men of the district. However, on the executive there were fortunately two medical men who held permanent and *ex-officio* posts on the committee. In the end they compelled the management to arrange the conduct of

the hospital in a way satisfactory to the medical men of the neighbourhood. If every medical charity in the country had its contingent of general practitioners on the management it seems likely that many of the difficulties which now surround the situation would be speedily settled, or indeed would never have arisen. The professional philanthropist who has hitherto held the reins has not made a distinguished success of hospital management in its relations to the main body of the medical profession. The question naturally arises whether medical men would not themselves be competent to manage the charities that depend upon their gratuitous professional services for their existence. At any rate, the proposition is one which may be discussed with advantage in a meeting of this kind.

Provident Dispensaries.

Dr. OTTO WUNDERLICH presented a report to the association on Provident Dispensaries. He said: Among the remedies for preventing hospital abuse the extension of the provident dispensary system is regarded with favour by many would-be reformers. Two questions arise: (1) do provident dispensaries prevent hospital abuse? and (2) is the remedy in itself an entirely satisfactory one? After pointing out that provident dispensaries were quite as much in need of reform as hospitals he continued: The fees which are paid to the medical officers of provident institutions are smaller even than the average fees paid by friendly societies. It does not necessarily follow that they ought to be raised, because it might be objected that a medical man gets his *quid pro quo* by the introduction the work gives him to other patients. This argument, however, is quite fallacious. There are many districts where everybody belongs, or might belong, to a provident institution. In such a district the criterion by which to fix the minimum subscription is the ability of a medical man to earn a living on provident subscriptions alone. We find that with this mode of reckoning even the fees of friendly societies work out unsatisfactorily. With an annual subscription of 4*s.* per patient a medical man attending his full complement of 2000 patients could only earn £400 per annum. It is scarcely necessary to point out that with this amount he could not make both ends meet. If it were only the pauper class who availed themselves of the privilege of paying these small subscriptions nobody would raise any objection. The very poor are those for whom hospital out-patient departments were designed and anything which will lighten the work by their voluntary efforts is altogether admirable. But those persons who are generally recognised to make an unjustifiable use of free hospital treatment are also those persons for whom the present rate of provident subscriptions is totally inadequate. If this is admitted it will follow that to endeavour to replace the hospital out-patient departments by a system of provident dispensaries as conducted under actual conditions will amount merely to replacing one form of abuse by another. The remedy which is usually suggested for these abuses is a wage limit. In the same manner as the medical tariff varies with the value of a patient's house, so the rate of provident subscriptions ought to vary with the wages earned. The moment the limit at which real poverty ceases is reached hospital abuse begins and the present rate of provident subscriptions becomes inadequate. The rate of 4*s.* a year is fair only for the pauper class and persons earning less than 20*s.* or 25*s.* a week. A rate of from 6*s.* to 8*s.* a year might be held sufficient for persons earning up to 30*s.* and 40*s.* a week, whilst a rate of 10*s.* a year would suffice for any person whosoever who did not mind putting up with the restrictions and inconveniences attendant upon provident work. How far such a scheme is from being realised in provident institutions is well known. Their great defect is a lack of elasticity; their fees are not adapted to the means of the members, but are only framed to meet the requirements of the very poor. The following points merit the attention of the Hospital Reform Association. The competition between free hospital out-patient departments and provident dispensaries tends to depress the rate of subscriptions. Only if free out-patient departments are abolished will it be possible to put them on a proper basis. Like most charities provident dispensaries bid for patients to swell the returns and for that purpose they reduce the scale of subscriptions. This would be impossible in the face of opposition from the medical profession except for the reason that they maintain an injurious control over their medical staffs by limiting their numbers. They compel them to work at impossible figures through fear of incurring a serious loss if they should resist. Any discrimination between medical men in a district leads to the formation of fresh dispensaries by those medical men whose services are not admitted. This competition between dispensaries is another cause for an undue reduction of the subscriptions. Dispensaries become regular "corners" in providence. All these considerations affect two points mainly—the subscriptions and the medical staffs—and the following recommendations in regard to them are herewith submitted to the Hospital Reform Association for their adoption. 1. Subscriptions: The provident subscriptions should vary with the income or wages of the members. In practice, and in order to realise a scale which would also take into consideration the ages and infirmities of the members, it is recommended that every medical officer should make his own terms with each of his patients. Although this has not been generally done the system is perfectly feasible. The ordinary competition among members of the staff would be sufficient to prevent any abuse. 2. Medical Staffs: Medical men should be adequately represented on the management committees. They should be irremoveable except with the consent of the majority of their colleagues. Every medical practitioner residing in the district, except such as are debarred for ethical reasons, should be at liberty to join in the work.

The Defence of the Profession against Provident Dispensaries.

Dr. W. RICHARDSON RICE, honorary secretary of the Coventry Public Service, read a paper under the above heading. He said: The profession has now for many years been in a state of agitation over the question of provident dispensaries and it is evident that the time is now ripe for some definite action to be taken in this matter. It is of such vital concern to many of us as medical practitioners to have this question settled on a rational basis that I venture to suggest some means by which a definite result may be attained. It may be taken for granted, I suppose, that the agitation in connexion with the provident dispensary at Coventry is well known to all readers of THE LANCET and the *British Medical Journal*. Since the year 1893 we have been directing a determined attack on this institution. It may serve as an object lesson in medical politics and the lessons to be derived from this conflict may throw some light on the best methods of attack. In the first place we may assume that it is useless to appeal to any sense of fairness in the minds of those who are mainly responsible for the evils incidental to the management of these concerns. To the observant critic one point is clearly demonstrated in these cases and it is this, that the so-called modern working man, though ardently attached to the principles of his trade union, bitterly resents any attempt at combination on the part of medical men. The most striking phase in this movement indicates that those most in evidence are men in easy positions, such as foremen in factories, small manufacturers and the higher type of artisan, men of push and intelligence, who appear to have more object in promoting their own interests than the welfare of their humbler workers. If the so-called working man is met on a committee he is always to the front, abundant in talk, fertile in suggestion. His object always seems to be to assert his own individuality rather than promote the good of the cause he is supposed to represent. What follows as a natural consequence of this spirit? It is simply this, that in institutions managed by this class of man the benefits go to those who assert their own position and the poor and destitute are crowded out. If any radical change is possible in this matter it must be started from within our own ranks. If it needs must be that offences come let us attack and ostracise those through whom they come. Having assumed this much, let us see what steps can be taken against those who hold office in these dispensaries. In the Ethical Section of the British Medical Association we have met, deliberated and passed resolutions concerning the abuses of hospitals and dispensaries. In due course they have been sent to the council. In all seriousness may I ask what has been done or appears likely to be done? These gentlemen sit in solemn conclave and deliberate in stately dignity on these matters. They deliver the usual official reply couched in diplomatic terms and there is an end of it. Gentlemen, the only remedy we have in the matter is agitation, constitutional agitation if you like, but agitation loud and strong. Let me give you in detail some of the steps we have taken in Coventry with the present results. We have reported the case of two practitioners to the Royal University

of Ireland and the College of Surgeons of England. We have received no encouragement from them. Apparently they have no power at present or desire to inquire into the conduct of their graduates or licentiates. We are also attempting through the agency of the Association to attack the medical staff at the dispensary. They have made desperate efforts to defend their position as they dislike to confront the professional odium which this situation throws upon them. We have succeeded after much effort and persistent agitation in getting the institution condemned by all the leading organs of medical opinion. [Dr. Rice here quoted from the report of the Special Commissioner of THE LANCET, the *British Medical Journal*, and the *Medical Times and Hospital Gazette*. He continued:] We laid an indictment last year against the medical staff before the Ethical Committee of the Association. They referred the case to the Ethical Committee of the Birmingham and Midland Counties Branch, who reported to this effect: (1) that the dispensary medical staff hold appointments in an institution which has been condemned by the *British Medical Journal*; (2) the low scale of remuneration they accept seriously interferes with all medical fees in the town; (3) there is no proper attempt at enforcing what is known as a wage limit and the Public Medical Service has been established expressly to uphold the principle; (4) that the staff are in the hands of a lay committee; (5) that the dispensary touts for members; and (6) that they exploit the medical profession for pecuniary gain, as surplus funds are not all divided up among the profession. This report was published in February, 1897. The controversy has been going on with the Council of the British Medical Association since this time and it is our fervent hope that the members of the Association at this present annual meeting at Edinburgh will force the Council to make some definite pronouncement and if necessary declare that the position of this medical staff is not consistent with the dignity of the membership of the Association. This matter is more than of local importance to us at Coventry and may form a valuable precedent to guide future measures of reform. Pressure must be brought to bear on the Council so that stringent measures be adopted towards those members who defy, not only the opinion of the *Journal*, but also that of the Ethical Committee of the branch in which this work is carried on. It may be argued that men who are not amenable to the opinion of their professional brethren will care but little for expulsion from the Association. Possibly, however, the stigma rising from such an unenviable position would act as a powerful lever in some cases at least, causing these men to seriously reconsider the position in which they might be placed, and we could fain believe that some might be influenced by a strong condemnation from the representative Council of their profession. In addition to these measures of attack we must not neglect the effort at some means of constructive reform. In course of time we may thus be able seriously to undermine the strength and influence of these dispensaries. Medical men, as a rule, are not remarkable for their aptitude in transacting business; their early training and generous instinct unfit them for such work. In their efforts, however, to further the progress of their art they must take note of their opponents ever eager to pursue a commercial line of policy and organise their forces against the dismembered masses of an overcrowded profession. We must try to exterminate the middleman who comes between us and our patients. In the year 1893 we started in Coventry an organisation under medical control. We called it the Public Medical Service and established it on an ethical basis. This must be regarded as an essential feature in such movements, as it gives control over the conduct of its members and prevents the possibility of any practice infamous in a professional respect. We have at the present time a staff of 13 medical men. A few are not engaged in the active work but lend to it the support of their approval and sanction. Its chief object is to provide, for small weekly payments, medical relief to those whose weekly earnings are under 30*s*. The exigencies of professional life in Coventry rendered it inevitable that some movement of this nature should be started and it was resolved to inaugurate this service with a two-fold object; in the first place, to break down a most irksome monopoly, and in the second place to endeavour to carry out certain measures of reform. Its success, financially, numerically, and politically, has more than justified the anticipations then formed. An attempt was made to induce the dispensary medical men to coöperate with the rest of the profession in this movement but without success. We have now been able to enrol on our books at the end of our fourth year some 7500 members. The gross collections for last year amounted to about £1500, £916 of which was paid to the medical officers, £343 was paid to the chemists for drugs and prescribing, and £197 was paid to the collectors. It is claimed for the service that having a staff of 13 medical officers who see patients at their own houses at specified times the danger of large numbers collecting in one place is greatly obviated and greater individual attention can be given to each member, a higher tone of professional life is engendered, and greater opportunity given for the scientific treatment of disease. We continue to develop and reform the working of the scheme and are careful to limit the numbers under each medical man so that the charge cannot be brought against us of grinding out advice and medicine in wholesale quantities. The payment of a collector by commission on the number of entries must always form an objectionable feature in these schemes. There is an inducement to canvass which it is impossible absolutely to prevent, but we do our best to prevent it, and we have not been able to devise a different method of collection. In the event of any member selling his practice his vested interest is transferable to his successor and we find by experience that this works out well as we do not allow the patients to change their medical men except at the end of a quarter. Such is the skeleton of our scheme of attack on dispensaries managed by lay committees. If the medical men in every town will only band themselves together in some agency for the supply of medical relief to the working classes they will be taking the most important step in breaking the power of these irregular institutions. In course of time they must weaken their power by drawing from their numbers. If men will not act honourably towards their colleagues we must endeavour to compel them to do so with the help of our great Association, the licensing bodies, and, if possible, through the General Medical Council.

THE CONGRESS OF THE ROYAL INSTITUTE OF PUBLIC HEALTH.

THE Congress of the Royal Institute of Public Health was opened in Trinity College, Dublin, by Sir Charles Cameron on Thursday, August 18th, and in spite of the gloom of the weather the scene presented was a brilliant one. The Lord Mayor of Dublin drove in civic state to the Examination Hall, where he received the various delegates, after which Sir CHARLES CAMERON delivered the presidential address, which will be found on page 529 of our present issue.

The actual business of the Congress commenced on Friday, August 19th. At the conference of medical officers of health, over which Mr. T. J. Stafford, medical commissioner of the Local Government Board of Ireland, presided, an interesting debate on the Prevention of Tuberculosis took place. Mr. J. KNOX DENHAM, who introduced the discussion, said he hoped the conference would not close without a strong expression of opinion as to the imperative necessity of every sanitary authority in Ireland taking immediate steps to limit the depredations of this terrible enemy of nineteenth-century civilisation. In these islands one in eleven deaths were caused by it. If we wished to deal successfully with this scourge there were three points to be specially noted—(1) notification, (2) education, and (3) renovation. It was no uncommon thing for at least 100 patients to be treated in the morning at one of the dispensaries and it might be assumed that 20 per cent. of these were tuberculous. The waiting-rooms for out-patients at many of our hospitals and dispensaries left much to be desired, and it would be apparent that the crowding together of so many persons for any length of time might be a fruitful source for the dissemination of the tubercle bacillus. To meet this in a measure he advocated the establishment of a large central dispensary for the treatment of tuberculous diseases. The waiting-rooms would be large, well ventilated, and capable of complete daily disinfection and the consulting-rooms replete with all the appliances necessary for the study and treatment of such diseases, the staff to consist of a consulting medical board composed of representative members of the profession in Dublin, and the assistant staff of medical men, on whom the burden would fall, must necessarily be

numerous—numerous in view of the number to be treated, numerous in order that a not too exacting tax be made on their time, that they would be expected to attend at only regular intervals in order that they might be able to devote the time necessary for adequate examination, advice, and treatment. Such an establishment would meet with much public support and would be a great boon to our myriad suffering brethren. Having by means of notification ascertained when and where cases existed the sanitary authority could insist when necessary upon the complete renovation of the rooms occupied by patients, not neglecting whatever sanitary defects might exist in the premises.

Mr. ANTONY ROCHE read a paper on the Housing of the Poor. Papers on the same subject were read in the Parliamentary and Municipal Section. In the latter Section on Monday, August 22nd, Mr. CHARLES PORTER contributed a paper on the Supervision by Sanitary Authorities of Public Water Services in the Hands of Private Companies. The following resolution was passed:—

That this Congress hereby records its warm appreciation of the enlightened efforts of the Right Honourable H. Chaplin, M.P., President of the Local Government Board, to protect the consumers of water supplied by water companies, and ventures to express the earnest hope that during the forthcoming session the Government will introduce a public Bill embodying the proposals submitted by Mr. Chaplin to the House of Commons on June 23rd last.

Professor J. W. MOORE, whose Address will be found on page 534 of THE LANCET, presided over the Section of Chemistry and Meteorology. The programme included papers on Kingstown as a Health Resort; Valentia as a Health Resort; Climatology of Valentia Island; Remarks in connexion with the National Hospital for Consumption for Ireland, with some Meteorological and other Statistics; and Meteorological Tables at Fassaroe.

At the Conference of Army Medical Officers Sir JOSEPH FAYRER, Bart., K.C.S.I., F.R.S., contributed a paper on Enteric Fever among British Soldiers in India. In 1895, he said, there were 71,021 British troops on service in Bengal, Madras, Bombay, and Punjaub respectively, of whom 1870 were admitted to hospital for enteric fever, 477 deaths taking place. Enteric fever was a great scourge of our young soldiers in India, and our army was essentially a young one. The susceptibility of the young soldier under twenty-four years of age was much greater than that of older men, and Sir Joseph Fayrer suggested the expediency of not sending men to India until after this most susceptible period has passed. Major J. BATTERSBY, R.A.M.C., dealt with the Probable Causes of Enteric Fever among our Indian Troops; and Major WESTCOTT, R.A.M.C., contributed some Observations on Etiology, Vaccination, and Serum Diagnosis in Enteric Fever.

In the Section of Preventive Medicine and Vital Statistics papers were contributed on "The Causes and Management of Outbreaks of Typhus Fever Occurring in Rural Sanitary Districts"; "Prevention of Measles in Rural Districts"; "On the Control of Infectious Diseases, with Special Reference to Measles and Whooping-cough"; "The Notification of Measles"; "The Methods and Appliances at our Disposal for the Suppression of Outbreaks of Scarlet Fever, Small-pox, Diphtheria, and Typhus Fever in Urban and Sanitary Districts, having a Population of 5000 and Under"; "Microbial Infection of Milk and other Food Materials"; "The Duties of the Community with regard to Tuberculosis"; "Rabies"; and "The Functions of a Bacteriologist in a Public Health Department." In this Section Sir WILLIAM STOKES on Saturday strongly advocated the treatment of infectious diseases in isolation hospitals. Dr. W. R. SMITH proposed the passing of a resolution condemning the practice of treating infectious cases in general hospitals. This motion, which pointed directly to Dublin, was indignantly objected to by Sir WILLIAM THOMSON, who suggested the substitution of "England and Ireland" for "Dublin." After a breezy discussion the words "in certain localities" were substituted. Among the resolutions passed on Tuesday, August 23rd, when the Congress closed, was one regretting that no steps have been taken in the Local Government (Ireland) Act to render the appointment of county medical officers of health obligatory upon county councils.

The Health Exhibition held in connexion with the Congress was opened in the Royal University Buildings on August 18th by the Lord Lieutenant of Ireland. To adequately describe its contents would be impossible in the space at our disposal, but it may be said to have been almost complete in every detail and should prove a powerful stimulus to the study of all questions relating to public health. As an educational factor the formation of such museums is invaluable.

The banquet was held at the Royal College of Surgeons in Ireland on Saturday evening, when Sir Charles Cameron presided. Among those present were his Excellency the Lord Lieutenant, the Lord Mayor of Dublin, Lord Iveagh, Lord Emly, Professor Smith (President of the Royal Institute of Public Health), the Lord Mayor of Belfast, Sir William Pink, the Right Honourable W. J. Pirrie, Sir George Moyers, Right Rev. Monsignor Molloy, Captain the Honourable C. Cadogan, Sir Henry Thynne, C.B., Sir Henry Cochrane, Dr. Grimshaw, C.B., Captain H. W. Vane, Sir Christopher Nixon, Sir Robert Sexton, the High Sheriff, General Sir Henry Prendergast, Mr. T. W. Russell, M.P., Sir Andrew Reed, K.C.B., Sir Wm. Thompson, Sir Henry Simpson, Mr. James Campbell, Q.C., M.P., Mr. William Field, M.P., Sir William Kaye, C.B., the Mayor of Derry, Mr. A. W. Mason, Sir William Stokes, Mr. T. J. Stafford, Sir George Duffey, P.R.C.P.I., Professor M'Call, Professor Sunderbery, Surgeon-General Preston, the Mayor of Folkestone, the Mayor of Huddersfield, Dr. J. C. Thresh, Baillie Pollard, and Professor McWeeney.

Too much praise cannot be bestowed upon the Executive Committee not only for the way in which they organised the Congress and made rough ways smooth for strangers, but for the delightful series of excursions, &c., which they provided for delegates and members. During the week a luncheon was given by the High Sheriff, Alderman T. D. Pile; a garden party by invitation of their Excellencies the Lord Lieutenant and the Countess Cadogan; a dramatic and musical entertainment by the Corinthian Club; a garden party by Sir Christopher and Lady Nixon; a ball at the Mansion House by the Right Hon. the Lord Mayor of Dublin; and a garden party by the Right Hon. Alderman and Mrs. Meade.

The following honorary Fellowships of the Royal College of Physicians of Ireland and Diplomas in State Medicine of the Royal College of Surgeons in Ireland were conferred on Saturday. Hon. Fellows: Dr. Alexander Crum Brown, F.R.S., Dr. Matthew Hay, and Sir Richard Thorne, K.C.B. Hon. Diploma in State Medicine: Dr. T. W. Grimshaw, C.B. (Registrar-General for Ireland), Sir Henry Littlejohn, Dr. John William Moore, Dr. W. R. Smith, Mr. T. J. Stafford (Commissioner of the Irish Local Government Board), and Dr. J. C. Thresh.

MEDICAL REFEREES UNDER THE WORKMEN'S COMPENSATION ACT.

THE Secretary of State for the Home Department has made the following further appointments of medical referees under the Workmen's Compensation Act, 1897:—

Circuit No. 15 (additional appointment).—Dr. James Ramsay, York.
Circuit No. 24 (additional appointment).—Dr. Thomas Wallace Cardiff.
Circuit No. 28.—Dr. Thomas Dalton, Llandudno.
Circuit No. 30.—Mr. Jabez Thomas and Mr. W. Frederick Brook, Swansea; and Mr. Martin Jones, Aberdare.
Circuit No. 37.—Mr. William Brown Holderness, Windsor; Dr. John Gordon Gordon-Munn, Bushey; Mr. William Lucknow Bradshaw, High Wycombe; Dr. William Collier and Mr. Horatio Percy Symonds, Oxford; and Mr. Robert A. Milligan and Dr. Frank Buzzard, Northampton.
Circuit No. 47 (additional appointment).—Dr. Ralph Gooding, Blackheath, S.E.
Circuit No. 48.—Mr. Horatio Nelson Hardy, Dulwich-grove, S.E. Mr. Elliott Daunt, Sevenoaks; Mr. Norman Hay Forbes, Tunbridge Wells; Dr. Charles Pye Oliver, Maidstone; Dr. William Chatterton Bromley, Kent; and Mr. Charles John William Pinching, Gravesend.
Circuit No. 55.—Mr. Charles Henry Watts Parkinson, Wimborne Minster; Mr. William Rendall, Maiden Newton; Mr. Wm. Burrough Cosens, Dorchester; Mr. William George Vawdrey Lush, Weymouth; Dr. F. W. Ramsay, Bournemouth; Mr. H. Coates, Salisbury; and Mr. Edward Charles Garland, Yeovil.

THE LATE MISS FOSTER.—Dr. Slade-King held an inquiry at Morthoe on August 18th upon the death of Miss Winifred Foster. The evidence showed that the deceased was drowned by the ground-swell on August 14th, the body not being recovered until August 17th. Dr. Slade-King said that he had held office in the district for fourteen years and had never held an inquest on a case of drowning. A verdict of "Death by misadventure" was returned. Miss Foster was buried at Morthoe on August 19th.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Sanitary Circumstances of the Bettws-y-Coed Rural District and on Prevalence of Enteric Fever and Diphtheria in the District, by Dr. S. W. WHEATON.[1]—The region of which Dr. Wheaton treats comprises hills, valleys, villages, and hamlets familiar to almost every holiday maker in North Wales. Bettws-y-Coed rural district, some 60,000 acres in area, contains the parishes of Bettws, Capel Curig, Trefriw, Penmachno, and Dolwyddelan. The census population of the district in 1891 was 5598, but in summer time, as Dr. Wheaton points out, the number of inhabitants is probably doubled. In each village and hamlet in the district Dr. Wheaton found a multiplicity of insanitary conditions. Certain of these conditions, such as the absence of public scavenging in the villages, nuisances from defective privies, or from keeping pigs close to dwellings, are common enough in scattered rural communities, and their abundance in the neighbourhood of Bettws can hardly be considered unexpected. But we are scarcely prepared to learn from the report that in this district of mountain streams nearly every village has a water-supply liable to dangerous contamination, or that to judge from the condition of cowsheds and dairies pure milk is as far to seek as pure water. Yet it appears that in the case of Bettws the water-supply of the village is taken from the Llugwy at a point just above the Swallow Falls. Between this point and Capel Curig, three and a half miles higher up the stream, Dr. Wheaton found "abundant evidence of gross pollution of the river by sewage from dwellings"; thus almost all the water-closet and other sewage from Capel Curig passes without treatment to the Llugwy, privies are built over small watercourses falling into the river above the intake, and cottagers living near the stream habitually empty their privy pails into it. Again, in Trefriw village, instead of taking the public supply from the large and unpolluted mountain lake Llyn Crafnant, the water is obtained from the River Crafnant at a point two miles below the lake. In the course of these two miles the pure lake water has received pollution from manured fields and by excrement and refuse from houses near the banks of the river. The public supplies of Cwm Penmachno and of Dolwyddelan are open to similar serious objections. Other defects pointed out by Dr. Wheaton in nearly all the villages in the district are defective sewers and improper means of disposal of sewage, unsatisfactory slaughter-houses, and cowsheds "filthy, overcrowded, and without drainage," in which when the cows are shut up "the crevices are plastered up with filth to keep the air out." Owing to the Infectious Diseases (Notification) Act not having been adopted in the district, information as to cases of infectious sickness was not easy to come by. Dr. Wheaton learned, however, of 13 cases of enteric fever in Bettws-y-Coed last autumn; of other cases of the same disease at Trefriw both in 1896 and 1897; and of 104 cases of diphtheria, 12 of which proved fatal, occurring in the village of Cwm Penmachno since the summer of 1897. As might have been expected from the state of things reported, sanitary administration by the rural district council is practically *nil*. The medical officer of health, Dr. Peter Fraser, has indeed drawn the attention of the district council to many of the sanitary evils of the place, and an inspector of nuisances, whose salary is but £60 for whole-time work, has done his duty in reporting a variety of unwholesome conditions. But the district council has in most cases neglected to apply any remedy, and even when moved to pass resolutions on sanitary matters it has taken no steps to see them carried out. It appears from the report that the Carnarvonshire County Council has now been successfully petitioned to create a separate Bettws-y-Coed urban district. Creation of such small urban districts is in any case doubtful wisdom. In this instance the rural council's neglect of its sanitary duties gives some plausibility to the demand for separation. But it is also a strong reason why that council should be made to do its duty rather than be assisted to shake off its responsibilities.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 2d.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Hastings Urban District.—Dr. Scarlyn Wilson reports a case of some interest *quâ* the infective power of desquamation in scarlet fever. On examining some school-children he found two members of one family peeling freely from an attack of scarlet fever contracted some six week previously. Apparently these two children had been attending school regularly since their illness, which was presumably not recognised. No other child, however, sickened from the disease in spite of the attendance of these two children until five weeks after the attack, when an outbreak occurred amongst the scholars. The question which occurs to us is whether the outbreak supposed to have been caused by these two desquamatory children was really so caused. Dr. Wilson also furnishes another interesting narrative, this time as to diphtheria. After an outbreak in a boys' school the scholars were sent home, and in eight weeks time, prior to the proposed reassembling of the scholars, a scraping from the throat of each child was examined. In some the bacillus of diphtheria was detected even although these children had never shown signs of diphtheria; nor did they do so subsequently.

Southampton Urban District.—Mr. Wellesley Harris reports an outbreak of pemphigus, apparently what is known as "pemphigus neonatorum." Fourteen infants were affected and the cases arose about the eighth or tenth day after birth. They did not all occur in the practice of one midwife though many of them did so. No satisfactory explanation of the cases was discovered. These bullous eruptions in newly-born infants are very frequently of syphilitic origin, but it is not apparent that this was the cause in the cases here in question. Mr. Harris calls attention to the large quantities of milk which are being imported into Southampton from France. The milk reaches Southampton in large cylinders and is from these despatched in the usual receptacles to its destination. Samples of this milk have been analysed and reported to be genuine milk of average quality; it, however, contains formaldehyde in large quantities. As Mr. Harris remarks, although this milk may in a sense be genuine we have no guarantee as to its being drawn and stored under satisfactory conditions, and it seems rather an absurdity to make stringent regulations as to our home supply and to admit foreign produce without demur—that is to say, unless we can enable the public to recognise what is of foreign origin and what is home produce. In connexion with foreign margarine, too, Mr. Harris has discovered a somewhat amusing, though none the less iniquitous, practice. Margarine from a French factory is taken on arrival at Southampton to a private house where it is worked up into half-pound pats, stamped to resemble butter, and finally hawked around the streets of Southampton by country-looking persons specially selected for this purpose. A question has been raised by Mr. Harris which presses for settlement in places other than Southampton. The fact that the details of house drainage are so often settled in the surveying or engineering department without reference to the medical officer of health must frequently in such cases lead to friction between the departments and injustice to builders and householders. For the medical officer of health to condemn that which another department has sanctioned and approved is not an easy matter, and yet that is the position in which a conscientious medical officer of health must be frequently placed. Mr. Harris suggests that the building by-laws should provide that no new house shall be occupied until the house drainage has been certified to be free from defect by the medical officer of health. Clearly some reform is necessary in this direction.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6510 births and 4727 deaths were registered during the week ending August 20th. The annual rate of mortality in these towns, which had increased in the five preceding weeks from 14·7 to 20·5 per 1000, further rose last week to 22·0. In London the rate was 23·4 per 1000, while it averaged 21·0 in the thirty-two provincial towns. The lowest death-rates in these

towns were 8·6 in Halifax, 12·4 in Burnley, 12·7 in Oldham, and 13·7 in Huddersfield; the highest rates were 24·7 in Leeds, 26·4 in Preston, 26·9 in Sheffield, and 31·1 in Liverpool. The 4727 deaths included 1250 which were referred to the principal zymotic diseases, against 796 and 1127 in the two preceding weeks; of these, 994 resulted from diarrhœa, 74 from whooping-cough, 57 from measles, 53 from diphtheria, 42 from "fever" (principally enteric), 30 from scarlet fever, and not one from small-pox. No death from any of these diseases was recorded last week in Halifax; in the other towns they caused the lowest death-rates in Burnley, Huddersfield, and Gateshead, and the highest rates in Birmingham, Salford, Liverpool, Preston, and Sheffield. The greatest mortality from measles occurred in Portsmouth and Plymouth, from whooping-cough in Swansea, Salford, and Preston, and from diarrhœa in Croydon, Birmingham, Leicester, Liverpool, Preston, Sheffield, and Leeds. The mortality from scarlet fever and from "fever" showed no marked excess in any of the large towns. The 53 deaths from diphtheria included 26 in London, 4 in West Ham, 4 in Birmingham, and 3 in Leeds. No fatal case of small-pox was registered during the week under notice either in London or in any other of the thirty-three large towns; and only two small-pox patients were under treatment in the Metropolitan Asylum Hospitals on Saturday last. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2241, against 2321, 2326, and 2293 on the three preceding Saturdays; 187 new cases were admitted during the week, against 232, 224, and 201 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 174 and 171 in the two preceding weeks, rose again last week to 196, and were 30 above the corrected average. The causes of 45, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Salford, Leeds, Newcastle-upon-Tyne, and in fifteen other smaller towns; the largest proportions of uncertified deaths were registered in Wolverhampton, Birmingham, Liverpool, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 20·0 and 19·8 per 1000 in the two preceding weeks, further declined to 18·1 during the week ending August 20th, and was 3·9 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·7 in Edinburgh and 16·7 in Dundee to 20·4 in Leith and in Perth and 27·5 in Paisley. The 546 deaths in these towns included 70 which were referred to diarrhœa, 24 to whooping-cough, 9 to "fever," 7 to scarlet fever, 6 to measles, and 2 to diphtheria. In all, 118 deaths resulted from these principal zymotic diseases, against 134 and 136 in the two preceding weeks. These 118 deaths were equal to an annual rate of 3·9 per 1000, which was 1·9 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had increased from 55 to 80 in the four preceding weeks, declined to 70 last week, of which 32 occurred in Glasgow, 11 in Paisley, and 9 in Dundee. The 24 deaths from whooping-cough exceeded by 7 the number recorded in the preceding week and included 15 in Glasgow and 5 in Aberdeen. The deaths referred to different forms of "fever," which had been 1 and 5 in the two preceding weeks, further rose to 9 last week, of which 7 occurred in Glasgow. The 7 fatal cases of scarlet fever showed a decline of 5 from the number in the preceding week and included 5 in Glasgow and 2 in Aberdeen. The deaths from measles, which had declined from 25 to 13 in the three preceding weeks, further fell to 6 last week, of which 2 occurred in Dundee. The deaths referred to diseases of the respiratory organs in these towns, which had been 79 and 71 in the two preceding weeks, rose again to 80 last week, and exceeded by 18 the number in the corresponding period of last year. The causes of 25, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·9 and 25·5 per 1000 in the two preceding weeks, declined again to 21·8 during the week ending August 20th. During the past four weeks the rate of mortality in the city has averaged 23·8 per 1000, the rate during the same period being 19·8 in London and 17·8 in Edinburgh. The 146 deaths registered in Dublin during the week under notice showed a decline of 25 from the number in the preceding week, and included 28 which were referred to the principal zymotic diseases, against 27 and 31 in the two preceding weeks; of these, 22 resulted from diarrhœa, 3 from "fever," 1 from measles, 1 from scarlet fever, 1 from whooping-cough, and not one either from small-pox or diphtheria. These 28 deaths were equal to an annual rate of 4·2 per 1000, the zymotic death-rate during the same period being 6·3 in London and 1·2 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 19 in the four preceding weeks, further rose to 22 last week. The deaths referred to different forms of "fever," which had been 5 and 3 in the two preceding weeks, were again 3 last week. The mortality from scarlet fever and from whooping-cough showed a decline from that recorded in the preceding week. The 146 deaths in Dublin last week included 49 of infants under one year of age, and 30 of persons aged upwards of sixty years; the deaths of infants exceeded the number registered in any recent week, while those of elderly persons showed a decline. Five inquest cases and 4 deaths from violence were registered, and 43, or nearly a third, of the deaths occurred in public institutions. The causes of 5, or more than 3 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

FLEET-SURGEON ANTHONY GORHAM, M.D. R.U.I., has been placed on the retired list with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets. Surgeon Edward Cuffey has been allowed to withdraw from Her Majesty's Naval Service with a gratuity.

The following appointments are announced:—Staff-Surgeon B. C. E. F. Gunn to the *Severn*. Surgeon C. S. Bennetts to the *Halcyon*.

ROYAL ARMY MEDICAL CORPS.

Major W. E. Berryman proceeds from Portsmouth to Bulford Camp for duty during the manœuvres. Lieutenant-Colonel W. B. Allin officiates as Principal Medical Officer, Aldershot District, during the absence of Surgeon-General T. F. O'Dwyer with the Northern Army at the manœuvres. Lieutenant-Colonel W. T. Johnston is placed under orders for India. Captain R. J. W. Mawhinny is transferred to Dublin.

INDIA AND THE INDIAN MEDICAL SERVICES.

Brigade-Surgeon-Lieutenant-Colonel A. S. Reid, Bengal Establishment, 38th Dogra Regiment of Bengal Infantry, is appointed Principal Medical Officer, Kohat-Kurram Force, vice Brigade-Surgeon-Lieutenant-Colonel Murphy, on leave. Surgeon-Captain Jordan, Officiating Deputy Sanitary Commissioner, Metropolitan and Eastern Bengal Circle, is granted furlough for twelve months. Surgeon-Captain Morwood, Civil Surgeon, Shahjahanpur, is appointed to hold Visiting Medical Charge of Hardoi in addition to his other duties. The services of Surgeon-Lieutenant-Colonel Mair (Bengal) are placed temporarily at the disposal of the Government of Bengal for employment as Officiating Inspector-General of Jails, Bengal.

The Queen has approved of the following admissions to Her Majesty's Indian Medical Service:—To be Surgeon-Lieutenants: Thomas Hunter, Walter Rothney Battye, Harold Budgett Meakin, George Hutcheson, William Glen Liston, Harold Boulton, Richard William Anthony, Ernest Frederick Gordon Tucker, George Edward Stewart, Frank Stuart Corbitt Thompson, Thomas Shepherd Novis, John William Watson, Herbert Joseph Richard Twigg, and Charles William McGillicuddy Orpen.—*London Gazette*.

ROYAL ARMY MEDICAL CORPS.

The following is the list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London:

	Marks.		Marks.
F. Warren	2538	G. W. G. Jones	2183
J. B. Hodgson	2517	J. W. H. Houghton ...	2117
H. P. W. Barrow	2302	H. S. Taylor	2101
M. H. G. Fell	2511	A. L. Scott	1991
T. C. Lauder	2415	J. W. Leake	1969
J. G. Gill	2282	R. H. Lloyd	1935
W. B. Winkfield	2266	D. R. Curme	1892
G. H. Goddard	2211	G. M. Goldsmith	1848

THE INDIAN MEDICAL SERVICE.

The following is the list of candidates who were successful at the competitive examination for the Indian Medical Service, held in London on August 5th:

	Marks.		Marks.
J. C. H. Leicester	3179	L. B. L. Parker	2336
H. Innes	2888	T. S. Ross	2316
W. S. Willmore	2660	J. N. Walker	2278
L. T. R. Hutchinson ...	2604	D. B. Kemp	2274
A. C. Walter...	2553	V. H. Roberts	2259
C. Hudson	2523	J. B. Robinson	2215
A. M. Fleming	2469	G. P. T. Groube	2131
H. M. Cruddas	2460	G. King	2096
C. F. Weinman	2452	P. P. Atal	2091
E. L. Ward	2411	W. McM. Pearson	2027

MEDICAL HISTORY SHEETS FOR BARRACKS.

Acting on the recommendation of his medical advisers the French War Minister has decided on issuing orders that in future at all military stations a special sanitary register is to be kept up for each separate building occupied by soldiers, the object of the new ordinance being the accumulation of information likely to assist medical officers in their efforts to extinguish epidemic and contagious diseases. Each "barrack sanitary register" is to consist of two parts, the first part being devoted to a detailed description of the building, including general plan, altitude, style of architecture, aspect, material employed, cubature of rooms, date of erection, previous history of site, nature of soil, and subsoil, source and quality of water-supply, system of drainage with plans of drains old and new, sanitary condition of neighbourhood, &c., while in the second and more novel part of the register the medical history of each building is to be carefully kept up to date. Amongst many other things there are to be noted daily the number of occupants in each room, the number of men reporting sick together with the diseases they are found to be suffering from, the occurrence of epidemic or contagious diseases, the precise situation of the beds occupied by the affected soldiers, &c. The nature and date of all repairs are also to be recorded, as a full description is to be given of all sanitary measures which may be adopted. There can be no doubt that a register of this sort would afford valuable information in many doubtful cases and should similar records be deficient in our own barracks it would, we venture to think, be well to introduce them without delay.

THE SPANISH-AMERICAN WAR.

The Spanish-American war is happily a thing of the past. The Americans will now have to settle with the insurgents and natives of the places which they have already taken or which will be hereafter ceded to them. As far as Cuba is concerned there seems to have been a serious administrative failure on the part of the War Department at Washington. The state of things at Santiago, together with the alleged want of proper arrangements on board the transports conveying the sick and wounded from Cuba, the insanitary position and wretched condition of the sick camps at Montauk Point and other places in America whither the sick are being sent, have naturally given rise to very serious complaints. If the condition of things be as bad as is described it would seem that there was a state of unpreparedness on the part of the Americans which was as surprising as it was lamentable.

A FRENCH MEDICAL OFFICER ACCOMPANIES GENERAL KITCHENER'S ARMY.

Dr. Duval, surgeon-major of the 125th regiment of the line, has received permission to accompany the British and Egyptian forces in their advance on Khartoum. This officer, who is a Knight of the Legion of Honour, has already enjoyed an opportunity of making himself acquainted with the way in which our army medical affairs are managed on active service, having been present during the late operations against the Afridis on the Hindu Kush frontier.

DEATHS IN THE SERVICES.

Deputy Inspector-General of Hospitals E. W. Bawtree, Surgeon-Major (retired), at Mistley Hall, Essex, on August 13th, in his eighty-first year. He entered the Army in 1843, became Surgeon-Major in 1866, and retired with the honorary rank of Deputy Inspector-General in 1872. He served in the New Zealand War and acted as Senior Medical Officer in Taranaki from May, 1865, to April, 1866. He also served in the Abyssinian expedition as Principal Medical Officer of the British troops, 2nd Division, from March, 1868, to the termination of the campaign (medal).

Correspondence.

"Audi alteram partem."

BACTERIOLOGICAL LABORATORIES IN INDIA.

To the Editors of THE LANCET.

SIRS,—In a recent issue of THE LANCET I read the following:—

> When the recent outbreak of plague occurred at Calcutta it was a matter of obvious importance that the exact nature of the disease should be determined with the least practicable delay. Happily for the Government of Bengal, the services of M. Haffkine were available and he was able to report, as the result of a bacteriological examination, that the outbreak was due to true bubonic plague. We have heard a great deal about the establishment of bacteriological institutes or laboratories in India; now here was an occasion in which a bacteriological laboratory in Bengal would have been of the greatest use, and we are glad to notice that the *Englishman* of Calcutta has called attention to the subject.

To the credit of the Municipal Commissioners of Calcutta be it said that, on the representations of the late medical officer of health, Dr. Simpson, they provided and equipped a bacteriological laboratory, so that I was able to work out my first case of plague bacteriologically. I obtained the bacillus in pure culture and sent two agar slopes to Professor Haffkine in Bombay for confirmation of my results, as I was advised that Government would not take the responsible step of declaring the city an infected area without the opinion of an expert. The post-mortem examination was absolutely typical of plague. I know of no other disease which produces such pathological features—huge hæmorrhages extending from an affected femoral gland up into the abdomen behind the peritoneum and half way down the thigh, and petechial hæmorrhages on the heart and other viscera. I made cultures from the gland, spleen and heart's blood. From the cultures I inoculated two guinea-pigs subcutaneously in the thigh. Both died four days later with buboes and hæmorrhages and I got the same bacillus in culture and under the microscope from them. I also obtained it growing in stalactites from ghee (clarified butter) floating on the surface of a flask of bouillon. So I had pathological, microscopic, and cultural proof, which was further supported by the clinical history I had obtained, before I heard from Professor Haffkine. I may add that my investigations were closely followed by Surgeon-Colonel T. H. Hendley, C.I.E., Inspector-General of Civil Hospitals, and Surgeon-Major H. J. Dyson, F.R.C.S. Eng., Sanitary Commissioner, who were satisfied with the accuracy of my results.

I am, Sirs, yours faithfully,

J. NIELD COOK, D.P.H.,
Health Officer.

Municipal Office, Calcutta,
August 3rd, 1898.

BERI-BERI AND RICE.

To the Editors of THE LANCET.

SIRS,—*Apropos* of Dr. W. K. Hunter's very interesting report on two cases of beri-beri in the recent issue of THE LANCET[1] I would like to offer a criticism. Though beri-beri is not so common in India as is generally supposed yet it is frequently met with in Madras and Burma. In Calcutta and Bengal generally I only know of cases among Chinese in Calcutta. Till recently a lamentable confusion has existed in India about this disease. What is sometimes called beri-beri in Assam and Ceylon is now known to be ankylostomiasis. Cases of anæmic dropsy due to malaria have even been mistaken for beri-beri, whereas anæmia is neither a necessary nor important symptom of the disease. To return, however, to Dr. Hunter's paper. If his discovery of the white staphylococcus (identical with that of Pekelharing and Winkler) in rice be confirmed and found in other cases it will go far to prove Dr. N. Macleod's theory of beri-beri being not a "place" but a "food" disease. I have before me as I write Vordermann's elaborate report in Dutch on the subject of rice and beri-beri (*vide* also Dr. Eikjman's article in *Janus*, August, 1897); there it is shown that in many Javan prisons where "red" rice was used there was no beri-beri, whereas when "white" rice (i.e., rice with the red cuticle

[1] THE LANCET, June 25th, 1898.

removed) was issued much beri-beri existed among the prisoners. No other factor, according to Dr. Vordermann's report, was of any importance compared with the distinction between "red rice" and "white rice." It is not easy to see how the removal of the red cuticle of rice could influence the incidence of a disease like beri-beri. The nitrogenous value of the rice would be practically equal in both cases, so the experience of the abolition of "kakkee" in the Japanese Navy does not help us. Moreover, in Bengal gaols, where the population is almost entirely a rice-eating one, we never get beri-beri, though the jail code insists most strongly on the issue of only thoroughly cleaned (white) rice (*vide* my "Manual of Jail Hygiene," p. 36). Can it be that the organism of beri-beri only attacks rice from the further East? I would ask medical officers of ships carrying Lascars to inquire the source of the rice issued to the crews. Is it from an Indian port or from Rangoon, Siam, or further East? There may be something in this suggestion. But no matter where the rice comes from how does the germ escape being killed by cooking? It is not easy to understand how any microbe could withstand the boiling which rice gets when cooked according to Indian methods. Has Dr. Hunter found the staphylococcus in cooked rice? Or if so, could the germ not have found its way into the food when exposed in plates on the theory that beri-beri is a *place* disease, as Manson holds? Manson, by-the-bye, in his Tropical Diseases Manual appears to have given up the organism of Pekelharing, and Glogner's amœba has so far little evidence. Surely the prolonged stay of beri-beri in the Richmond Asylum has given Dublin bacteriologists an opportunity of studying the organism of this disease. If so I have seen no accounts published. Perhaps Mr. C. Norman's paper at the Edinburgh meeting of the British Medical Association will afford the needed and expected light.—I am, Sirs, yours faithfully,

W. J. BUCHANAN, B.A., M.B., B.Ch., Dip. S. Med. Dub.,
Surgeon-Captain, I.M.S., Superintendent Central Jail,
Dacca.

Dacca, Bengal, August 2nd, 1898.

BLOOD GRANULES.

To the Editors of THE LANCET.

SIRS,—May I be allowed to point out an error in the record of my demonstration of blood granules[1]? The relation of granules to red cells in Bright's disease and chronic gout is there given as from 1 to 30 to 1 to 40. It should have been from 1 to 1 to 1 to 5, as one of the chief points of the demonstration is that in pathology the granules are very numerous in Bright's disease and chronic gout, conditions in which all observers agree that there is much uric acid in the blood; and, on the other hand, are very scanty, from 1 to 30 to 1 to 40, in fever, in which observers again agree that there is little or no uric acid in the blood.

I am, Sirs, yours faithfully,

Brook-street, W., August 20th, 1898. ALEXANDER HAIG.

APOTHECARIES' HALL OF IRELAND.

To the Editors of THE LANCET.

SIRS,—Your Irish correspondent was in error in stating in THE LANCET of August 13th, 1898, that "the first examination by the Apothecaries' Hall of Ireland in conjunction with the Royal College of Surgeons in Ireland which has been held since the decision of the General Medical Council and the appointment of the new board of examiners has just concluded." Except in the cases of former candidates the Royal College of Surgeons in Ireland has ceased to examine in conjunction with the Apothecaries' Hall.

I am, Sirs, yours faithfully,

August 23rd, 1898. G. F. BLAKE.

"EUNATROL."

To the Editors of THE LANCET.

SIRS,—Messrs. Zimmer and Co. are obliged for the notice contained in THE LANCET of July 30th on their exhibits at the Edinburgh exhibition. With regard to the criticism on the part of your reporter about the name "eunatrol" they say: "These remarks we cannot but find very much out of place. Apart from the fact that the name of 'eunatrol' abbreviates the description of pure oleate of sodium by three words we have here an *absolutely* pure oleate of sodium. Oleate of sodium is, by no means a new thing—its rancid and objectionable smell, however, made it practically useless. Our chemically pure oleate of sodium is a new invention, which we venture to say also deserves a special name."

We remain, Sirs, yours truly,

Pro W., B. AND CO.,
W. BREDT.

Lime-street, E.C., August 22nd, 1898.

*** The "reporter" in question was the chemist in charge of our analytical department. So far from finding his criticism out of place we consider it, on reflection, very apt.—ED. L.

[1] THE LANCET, August 20th, 1898, p. 515.

THE SOUDAN CAMPAIGN.

(FROM OUR SOUDAN CORRESPONDENT.)

SURGEON-GENERAL TAYLOR arrived a few days ago from England and the disposition of the various medical units was arranged. There are to be twelve field hospitals under the charge of Majors of the Royal Army Medical Corps, a 100-bedded hospital at the Atbara, and a 300-bedded one at Abadia. The hospitals on the lines of communication will be established on the various steamers which will run between the front and the base hospitals, and a medical officer will be on board the new gunboats which will play an important part in the bombardment of Omdurman. The troops from Darmali will be placed on board steamers there and taken up to Shatluka where the two brigades will concentrate, and from hence the general advance will be made. The cavalry and the Royal Artillery have each a field hospital allotted to them and this time there will be no want of medical officers or material. The Royal Engineers have been hard at work on the sun covers for the stretchers and a very good shaded stretcher has been made on the same plan as the Indian "dandy," on which severe cases can be moved with the minimum of jolting and exposure. Several new sets of capital instruments (aseptic) with sterilisers have been served out to the field hospitals and plenty of antiseptic dressings are available. The great difficulty will be the water for drinking purposes as we near Khartoum, as it is practically impossible to carry enough filters to supply the amount of filtered water needed for both brigades, but every precaution will be taken and the water will be boiled whenever practicable. It is intended to have a Pasteur filter for the field hospitals, but where transport is such a consideration it is not always possible to carry out good intentions. The health of the troops continues good and with the exception of a few scattered cases of enteric fever there is practically no sickness, but the men are getting weary of the forced inactivity and a move will do us all good. The one item which has not been decided on yet, so far as I know, is a hospital ship. This ought to be arranged for, as if we have any casualties and much sickness a properly equipped steamer at Alexandria with all necessary medical comforts and nursing appliances so that the patients could be put on board and taken straight to Netley would be of inestimable value. This ship should be entirely for the sick and wounded and should be ready at the close of the campaign. It is to be hoped that the general public will realise that upon this occasion the medical arrangements have been properly thought out and every item carefully looked after and that if there is any breakdown it will not be the fault of the officers or men of the Royal Army Medical Corps.

Fort Atbara, August 5th, 1898.

ABERDEEN HOSPITAL SATURDAY.—The balance at credit of the Aberdeen Friendly Societies' Hospital Saturday Fund has been allotted as follows:—Royal Infirmary, £600; Sick Children's Hospital, £150; Dispensary, £150; Convalescent Hospital, £100; District Nursing Association, £65; Ophthalmic Institution, £50; Hospital for Incurables (adults), £50; Hospital for Incurables (children), £10; total £1175. In virtue of these contributions the general committee have nominated 14 life managers for the Royal Infirmary, 6 for the Sick Children's Hospital, 6 for the Dispensary, and 1 each for the Ophthalmic Institution and the Morningside Hospital (Incurables).

THE ABUSE OF NURSING CHARITIES.

(FROM OUR SPECIAL COMMISSIONER.)

FROM evil good sometimes springs, and it does seem as if the medical profession has every reason to felicitate itself on the action taken by the "Maternity Charity and District Nurses' Home" of Plaistow. But for the aggressiveness of this so-called charity the profession in the east London suburbs would have remained in its former condition of apathy. Now, however, the spirit of organisation has spread, the necessity of resistance and self-defence is recognised, and a strong medical union is in course of formation. In August last year the Bishop of Colchester addressed an appeal to the *Times* for subscriptions to aid in establishing a branch of the Plaistow Nurses' Home at West Ham. Thus the grievance, which was the cause of many complaints at Plaistow, threatened to spread over to other districts. To Mr. Charles Allen is due the credit of having taken the initiative in organising resistance. He sent out numerous circulars, called personally on many of his medical colleagues, drew up a protest, and succeeded in obtaining the signatures of 51 medical practitioners to this manifesto. Several meetings of medical men were held and finally it was decided to form a union which is known as the "East Suburban Medical Protection and Medico-Ethical Society, Limited." It is a pity that at its start in life this organisation should have encumbered itself with so unwieldy a title. The word "union" is the only word necessary and it is just the one word which has been left out. The society, it will be seen, is a union. It was only necessary to add that it was a medical union and to give its geographical limitation. The title East Suburban Medical Union would have better met the case. However, this is quite a minor matter, and when the society was first started no one seems to have foreseen how rapidly it would develop into a genuine union. Indeed this is the most instructive and hopeful phase of the whole question. A grievance concerning a nursing institution brings members of the profession together, and thereupon they at once discover that there are scores of other grievances, that the position of medical men is threatened from all sides, that resistance by the individual is impossible, and the formation of a strong union is the only policy offering any chance of success.

Of course, the first action taken related to the grievance which had brought members of the profession together. A deputation was appointed to wait upon the Plaistow Maternity Charity to explain, firstly, that this charity was breaking its own rules by charging fees and that its nurses, whether trained or only serving an apprenticeship, were competing with the medical profession. Many persons who were in the habit of paying guinea midwifery fees to their medical advisers now called in one of the nurses, who only charged 5*s*. The Plaistow Maternity Charity obtains premiums of from £15 to £40 from the women who join this institution to be trained as nurses, then fees are obtained from the patients, and, finally, on the pretext that this is a charity, large donations are collected from the public. Under such circumstances there is no reason why the institution should not in the course of time be converted into a paying commercial concern. How can medical men or trained professional nurses who have no other source of income but their fees compete against an institution which not only receives fees from the patients but premiums from its nurses and large subscriptions from the public? All the medical men complain of this competition. They even accuse the nurses of touting and of interfering with the treatment of their patients. Thus in a house let out in tenements there may be two families. A medical practitioner is attending one family and a nurse from the Plaistow Nurses' Home is attending the other family. In the medical man's absence the nurse will give advice gratuitously to the medical man's patients. This may be done from motives of kindness and good nature, but it interferes with the medical treatment and advertises the fact that the nurses cost less than the medical practitioner. Also this interference may at times injure the patients, for it must be borne in mind that these nurses are often raw girls recruited from the uneducated classes who have paid their premiums but have not yet learnt much about nursing. Of course, any help given gratuitously to the extreme poor is better than no help at all; but when fees are charged and fully qualified practitioners are driven away and replaced by nurses the question as to the ability and knowledge possessed by these nurses may very justifiably be raised. Ought untrained nurses who are just beginning their apprenticeship to be sent to private patients?

It was on Feb. 11th last that the deputation of medical men waited upon the committee of the Plaistow Maternity Charity. In answer to their protest they were subsequently informed that the nurses' midwifery fee would be raised from 5*s*. to 10*s*., and that everybody would be forced to pay unless upon inquiry it could be proved that the breadwinner of the family was not earning more than £1 per week, or if a clergyman or a medical man asked that the nursing should be done gratuitously. Thus the Plaistow Maternity Charity has deliberately set itself to work to tap the sources of income on which the poorer practitioners rely—namely, patients whose earnings are above £1 a week and who can therefore be made to pay a midwifery fee of 10*s*. It is true that a promise has been given not to allow touting, and that this is now against the rules of the Plaistow Maternity Charity. The zeal, however, of subordinates renders this rule ineffectual. Thus, for instance, a short time ago a medical practitioner arranged to take a midwifery case and the fee was to be one and a half guineas. The patient said she proposed to engage a nurse from the Plaistow Maternity Charity and went there for that purpose. After having made the necessary arrangements the attendant who took down the name and address inquired what the applicant proposed to do about a midwife. The lady replied that having engaged the services of her usual medical attendant she did not require a midwife. In spite of this, and just as the lady was leaving and going downstairs, the attendant called out after her, "Do you really think a doctor is necessary?" Here, then, was a deliberate effort made to replace a fully qualified practitioner by a nurse who was to undertake this midwifery case though her qualifications might well be open to question. It was an attempt to undercut a medical practitioner by offering a nurse who would take a much smaller fee. The acceptance of the smaller fee by the nurse is economically possible because the institution from which she comes is supported by charitable donations. Thus instead of helping the poor this charity is in such cases working to impoverish medical men. A nurse whose education as a nurse has cost her from £15 to £40 is sent to replace a medical practitioner whose medical education has cost him from £500 to £1000. No wonder that the nurse can take a smaller fee, particularly when she lives at the expense of a charitable institution.

At the same time it is freely acknowledged by the medical practitioners that the nurses from the Plaistow Maternity Charity and District Nurses' Home are very useful, that they do excellent work, and that they would be most worthy of general support if they would not go beyond their legitimate field of action. Their business should be to nurse the poor gratuitously, but to nurse the poor alone. If they nurse persons who can afford to pay then they are unfairly competing against professional nurses who depend for their livelihood on the fees which well-to-do persons can give. The position of a well-trained nurse is as worthy of consideration as that of any other member of the community, and it is gross abuse that money given for charitable purposes should be employed to ruin so estimable and useful a calling as that of a trained nurse. Yet many high-class, or at least wealthy, people in the eastern suburbs of London employ nurses from the Plaistow Maternity Charity for various kinds of illness. For this ordinary nursing the nurses are not allowed to take any payment, but when the people who employ them have means they generally make a donation to the charity. Such donations are payments in disguise. From every point of view this is a heinous system. A person is ill; he has means and he wants a nurse. The only honourable course to pursue is to employ a trained nurse and pay the full market value of her services. Instead of this the patient sends to a charity, takes a nurse away who ought to be attending to the poor—thus defrauding the poor of the help which this nurse could give them and for which charitable persons have subscribed their money. The rich man, after having been nursed gratuitously by the charity nurse, now steps forward as a philanthropist by making a donation to the charity, giving probably a sum inferior to that which an independent trained nurse would

have cost him. Far from being a philanthropist, this man has been favouring a system of undercutting the market for trained nursing, thus helping to ruin the trained nurses. On the other hand, he has withdrawn from the slums of London one of the nurses available for the nursing of the extreme poor. He has saved a few shillings at the cost of the poor and at the cost of the trained nurses; and yet he appears on the list of donors to a charity, and those who are not acquainted with the inner workings of the transaction would look upon him as a philanthropist. This has happened over and over again, and it is quite possible that many who have committed this abomination are in no wise conscious of having done anything wrong. In this commercial community the instinct to buy in the cheapest market is so strong that it is done automatically and without reflection as to the moral consequences and responsibilities. But while it is thus scarcely surprising that some members of the general public should with thoughtless ignorance act in this manner it is most astonishing that a charitable and nursing institution should lend itself to the perpetration of such gross abuse. Here is the Plaistow Maternity Charity taking fees of from £15 to £40 to train poor girls as nurses, and yet it employs these very nurses to undercut the market and render the profession of nursing more and more precarious and ill-paid.

If from the question of ordinary nursing we proceed to the question of midwifery identically the same grievance will be found, only in this latter case the victim is not the trained nurse but the general medical practitioner. The charity nurse who assumes the functions of a midwife does for 5*s*.—now for 10*s*.—what the medical practitioner has been in the habit of doing for a guinea and upwards. Persons who formerly found no difficulty in paying the higher fee avail themselves of the charity to save their money. Donations given to the charity in order to help the extreme poor thus serve to economise the resources of the well-to-do and to impoverish the medical practitioners. But even with the poor there is no need of these midwives. In East London there are unfortunately many fully qualified medical men who are reduced to accepting half-guinea midwifery fees. Indeed, one or two have been known to take as little as 7*s*. 6*d*. Surely anyone who cannot afford such a sum for so serious a matter is justified in calling in the Poor-Law medical officer. Therefore where does the need of the midwife come in? Nursing and monthly nursing are often much needed and this is the proper field of action for a charity if the people are really poor. Instead of thus limiting their action to cases where charitable help is really needed the Plaistow Maternity Charity sends out its nurses to act as midwives to families who can afford to pay them 10*s*., thus taking the bread out of the mouths of the poorer practitioners and depriving the patients of the services of a fully-qualified medical attendant.

Such is the grievance which has brought the members of the medical profession together in east suburban London. It will be seen ultimately that as soon as they began to discuss this matter they discovered that there were various other complaints and difficulties which also required careful and energetic handling. Hence a union has grown out of this trouble and its action promises to be fruitful in the bringing about of many reforms which will be to the advantage of the general public and of the medical profession.

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Immediate Evacuation for Plague.—The Mortality in the Bombay Presidency.—The Enormous Plague Expenditure.

PALANPORE city was visited by plague in February, 1897, and a mild epidemic lasted until May. It became reinfected from Bombay in August. In the first outbreak few measures seem to have been adopted and during the second outbreak at first neither vigour nor thoroughness characterised the steps taken. On Nov. 2nd last the city was evacuated and by the end of the month the epidemic was practically at an end. House-to-house visitation had been a failure because of the objection to segregation and hospital treatment and also to the apathy of the search parties. Eight thousand people turned out into huts built by themselves. So far as the city is concerned the cessation of plague may be explained by the rapid subsidence occurring in the natural course of an epidemic, the outbreak having lasted about its normal period; but when every freshly-infected village in the district was dealt with on this plan the death-rate was reduced from 72·9 to 60·4 per cent. The proportion of cases to population is not given, but the lowered mortality is a distinct gain, and whereas previously 25 villages had recorded 465 deaths the 27 freshly-infected villages returned only 191 deaths. It is urged by the medical officer in charge that the cases were reduced by one half and that the mortality was lowered 12·5 per cent. The expenditure is said not to have involved the crushing liabilities which weigh heavily upon many cities and districts in the Presidency. The enormous expenses incurred by the plague operations have very seriously crippled the finances of many towns and cities. The municipality at Karachi have instituted a plague tax of 3 per cent. on house and land owners which will remain in force until 1901. In Bombay large sums have had to be borrowed—the expenditure having been over 30 lakhs of rupees—which will cripple the progressive work of the municipality for years. The expenses at every place having been so out of all proportion to the result achieved it may even be stated as doubtful, if plague had been left to take its course unchecked, whether it would have been attended by any greater disaster. The general unrest and the disturbance to trade would certainly have been avoided.

A recrudescence of plague has occurred in villages near Hyderabad; the mortality at places where plague still lingers is very high. For the past week Bombay records 82 cases, 70 deaths; Karachi 23 cases, 19 deaths; Surat 107 cases, 86 deaths; Sutara 59 cases, 56 deaths; Belgaum 338 cases, 262 deaths; Dhawar 164 cases, 129 deaths; the total for the Presidency being 1096 cases and 904 deaths—a percentage of 82·4, the total deaths recorded from plague being 93,183. In Calcutta the cases still continue to be sporadic. In Bombay the deaths from plague remain at an average of about 10 a day, one district alone, called Mandvie, maintaining it in anything like epidemic proportions. The great improvement scheme for Bombay involving several millions of pounds, is likely to be postponed.

August 5th.

THE SPANISH-AMERICAN WAR.

(FROM A SPECIAL CORRESPONDENT.)

Detention Camp, Egmont Key, August 9th.

Reception and Care of Sick and Convalescent.

SINCE I last wrote we have heard of a letter in the *New York Times*, from its correspondent here, in which strictures are made upon the direction of this camp and indirectly upon Dr. H. D. Geddings. The mere suspicion of any criticism of Dr. Geddings excited the liveliest indignation among the officers who have been detained here. The facts in the matter are briefly as follows. On the arrival of the steamship *Santiago* at quarantine on July 29th we were told we would be put on this Key for detention. It was found upon inquiry that Dr. Geddings was not at the camp, having taken a sick steward that very morning to Port Tampa. He did not expect any sick to be landed here, but, on the contrary, had received positive instructions that this camp was not to be used for any such purpose, so there was no reason why he should not have been temporarily absent. He did not receive our urgent telegram until 9 P.M. on Friday. After that late hour he made arrangements for stores and many necessary things, which the sudden call for provision for 186 men (mostly sick) demanded and he had also to obtain formal permission from Washington to allow us to land and occupy the camp. He was on hand early next morning. We were landed quickly without exposure or fatigue and in an hour or two at most the sick, convalescent and well were comfortably tented and given an abundance of good food. Dr. Geddings made constant rounds among the sick and well and saw that everything possible was done for them. In an incredibly short time he had a sufficient number of hospital stewards at work and things were running smoothly.

From the first the food has been plentiful and well cooked and many delicacies have been provided for both officers and men and dispensed with a liberal hand. The camp has been kept wonderfully clean and every little detail has been

looked after by Dr. Geddings himself. After the storm he took the officers (it so happened that the tents which they occupied had suffered most) and some soldiers into his own place and tenderly cared for all. During the night of the storm the chief steward (Mr. Peck) was out the entire night attending to the sick and Dr. Geddings was up very late.

Both officers and men have improved greatly under Dr. Geddings's care and all are most thankful to him for his courteous and unremitting attention. I have shown this statement to the officers, including General Duffield, Major D. B. Wilson, Captain C. D. W. Wilcox, Lieutenant Mark L. Hersey, Major Thornton, Major Wessels, Lieutenant J. C. Reeves, and others, who heartily endorse what I write.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Bangor Cottage Hospital.

FROM the annual report of this seaside hospital and convalescent home I find that there were 60 patients during the past year. The addition of new bath-rooms and improved sanitary arrangements has proved of the greatest advantage. The Society for Providing Nurses for the Sick Poor, Belfast, has sent 28 patients. The local medical men are thanked for voluntarily giving their services.

Fever in Armagh.

At a meeting of the board of guardians of Armagh, held on August 16th, it was reported that a third outbreak of fever had occurred in the Irish-street Barracks of the constabulary within one year. It seems that repeated representations had been made to the authorities by the local sanitary bodies to have the condition of matters remedied, but so far no effectual steps have been taken. One of the guardians proposed a motion, which was adopted, that the attention of the authorities should again be called to the condition of this barrack and that they be requested to provide a proper sanitary building for the police stationed there.

Sanitary Condition of Armagh.

At a special meeting of the Town Commissioners of Armagh, held on August 19th, convened to take steps regarding the insanitary state of many parts of the city as disclosed by Mr. Gray's report, which was before the board at a previous meeting, Mr. Gray indicated a large number of houses as being unfit for human habitation. Other dwellings were insanitary but might be made fit for human habitation. Practically, the report meant the closing of at least 100 houses, leaving perhaps from 400 to 500 persons without a home. It was decided to adjourn the consideration of that part of the report dealing with houses unfit for habitation until the September meeting and the landlords of those houses which Mr. Gray believed could be made fit to live in were ordered to be served with a specification of the work which the Commissioners required to be carried out.

Belfast Royal Hospital.

At the quarterly meeting, held on August 22nd, it was reported that during the previous three months there had been 556 intern and 6571 extern cases. A sum of £315 15*s.* 10*d.* had been realised by Hospital Saturday. At the close of the previous quarter the debt against the hospital amounted to £1544 18*s.* 11*d.* Since then the receipts from all sources had been £2007 1*s.* 0*d.* and the expenditure had been £2334 0*s.* 10*d.*, thus increasing the debt by £326 19*s.* 10*d.*, making the amount now owing by the hospital at the end of the eleventh month of the financial year £1871 18*s.* 9*d.* Owing to the rapidly increasing population of the city the demands upon the hospital are becoming more pressing and call for greater support and generosity from every section of the community. Professor Whitla, Dr. O'Neill and Dr. A. B. Mitchell were all re-elected medical attendants of the institution.

Visit of Delegates from the Dublin Health Congress to Belfast.

On August 22nd a company of delegates to the Dublin Public Health Congress, numbering some 65, paid a visit to Belfast on the invitation of the Lord Mayor and Lady Mayoress of that city. They were met and cordially welcomed at the railway station on their arrival by the local reception committee and were taken round various parts of Belfast, visiting the fire brigade station, the shipbuilding works at Queen's Island, the filter works of the Belfast water commissioners, &c. The Lord Mayor (Alderman Henderson, M.A.) entertained the delegates most hospitably to luncheon at the Grand Central Hotel. They returned in the evening to Dublin.

Irish Academic Honours to Scotch Medical Men.

The Royal College of Physicians of Ireland has conferred honorary Fellowships on Dr. A. Crum Brown of Edinburgh and Dr. Matthew Hay of Aberdeen. The honorary diploma in State Medicine has at the same time been conferred upon Sir Henry Littlejohn of Edinburgh.

Death by Lightning in the County Cork.

Last Wednesday night and Thursday morning a singularly violent thunderstorm passed over the south of Ireland. The flashes of lightning were so vivid and occurred at such short intervals that many people believed their houses to be on fire. The heavens were repeatedly illuminated and the smallest objects could be clearly discerned on the thoroughfares. The loud thunderclaps reverberating in quick succession caused considerable alarm to the timid. In many places a stampede occurred amongst cattle and several were killed by the lightning. Farmers have also to bewail considerable damage to crops, which had been particularly promising. It is stated that a young man, twenty-five years of age, residing near Macroom, was struck by the lightning. He was sleeping with his brother and in the course of the night, being greatly alarmed, got out of bed and walked from room to room. After a time he returned to bed and soon afterwards his brother spoke to him, but as he received no reply he endeavoured to arouse him, and then found that he was dead. Later it was ascertained that the floor of one of the rooms had been torn up, apparently by a thunderbolt, and it was assumed that the poor young man was struck by the electric fluid whilst wandering through the house, but the innate probabilities of the case are that fear acting on a weak heart was the immediate cause of death.

Resignation of a Medical Officer.

Dr. Thomas Nedley has resigned his appointment of surgeon to the household of the Lord Lieutenant of Ireland.

August 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Avian and Human Tuberculosis.

A PERFECT wealth of communications dealing with this subject has been laid before the Congress now sitting, but perhaps the most interesting researches are those of M. Nocard. He reminded his hearers that at first sight tuberculosis in birds appears to be very different from that in human beings. The fowl cannot be infected by inoculation with tuberculosis from a human being any more than from a bovine. On the other hand, certain animals, such as the dog and the guinea-pig, which are most susceptible to infection from both human and bovine tubercle, are very refractory to avian tubercle. If, however, a guinea-pig be inoculated in its peritoneal cavity with tuberculous matter from a bird it often dies, showing a special kind of lesion. A rabbit becomes tuberculous in a very different way whether the tuberculous matter be taken from a bird or from a human being. But after the inoculation has been passed through a series of animals the resulting lesions become similar. Horses, which are very fairly resistant to experimental tubercle, contract under natural conditions, tuberculosis rather commonly. Two types of the disease exist which have for a long time been distinguished clinically as the abdominal type and the pulmonary type. Recently M. Nocard has been able to establish the fact that these two forms answer to the two different origins of the tubercle bacillus. The pulmonary form is set up by the bacillus of human tubercle and the abdominal form by the avian variety. He has also found that the sputum of a tuberculous patient will kill a rabbit by inoculation but only very rarely a guinea-pig. Cultures made after several passages through a rabbit were exactly similar to those obtained from a tuberculous bird. The eating of tuberculous poultry is therefore not without danger. M. Nocard recalled numerous instances where poultry-yards had been infected by tuberculous people employed to look after them, but it is known that fowls which pick up

tuberculous sputa do not themselves become tuberculous. M. Nocard attempted to alter the bacillus of human tuberculosis by sowing it in the peritoneal sacs of poultry. He enveloped a glycerinated bouillon culture in a little bag of collodion and inserted it into the peritoneal cavity. After leaving it there for from five to eight months he withdrew it and found it to contain a sort of paste made up of bacilli. Cultures made from this paste grew extremely well, but a very interesting fact was observed. The bacillus had lost its human characteristics and assumed avian characters. It grew at high temperatures and the cultures did not present the characteristic frayed-out clumps. The bacillus was not yet fatal to fowls, and it was not until two or three passages through fowls and after from four to six months' time that it attained virulence enough to produce tuberculosis in these birds. In one case, however, a fowl suddenly contracted tubercle at the end of eleven months from the introduction of the collodion bag and at the post-mortem examination it was found that the bag had burst, thus showing that the development of the bacillus had proceeded far enough at the moment of the bag breaking to produce tubercle in the fowl. These experiments, M. Nocard considers, are a proof that human and avian tubercle are only two different varieties of the same disease.

The Congress of Neurology.

The Congress of Alienists and Neurologists now sitting at Angers have decided that the next meeting shall be held at Marseilles in April, 1899, with M. Doutrebente as President.

Transmission of Toxins from the Fœtus to the Mother.

At the meeting of the Academy of Sciences held on August 1st M. Charrin read a paper on the above subject. He stated that after a series of experiments he has succeeded in poisoning pregnant animals with diphtheria toxin by injecting this toxin into the fœtus while still *in utero*. He plans his incisions so as to avoid the placenta and distributes the doses among the various fœtuses. Abortion almost invariably takes place, but it is sometimes delayed long enough to allow the poison to circulate in the placenta. The nature of these microbial principles, the structure of animal membranes, and the difficulties of dialysis do not permit the question of transmission from the fœtus to the mother to be answered on merely *a priori* grounds. M. Charrin has not been able to obtain by this method a vaccine which is inimical to either diphtheria or tetanus, but in some few cases he has been able to augment the resistance of the mother to the bacillus pyocyaneus by using the corresponding toxin. The toxin employed, however, is very weak. He considers that by the process of dialysis or of selection the maternal economy absorbs weak doses of toxin or of certain portions of the toxin. From that time the maternal economy becomes resistant and Colles's law is founded on analogous facts. If in place of an artificial intra-fœtal injection it be supposed that things occur as they do in syphilis, if it be admitted that the fœtus receives a virus transmitted by the male parent, the toxins of this virus would at some definite period exist in the organs of the female parent after having during the intermediate stage existed in those of the offspring. These toxins bring about an immunity—that is to say, they confer on the tissues powers of phagocytosis or else of secreting bactericidal or antitoxic principles. To sum up, by means of the intermediary within the uterus the maternal cells acquire properties identical with those of the paternal cells. But the maternal organism transmits some of its properties to its descendants. When a new sire comes on the scene, the first one no longer having relations with the mother, and when a new impregnation takes place in the same mother she is able to impart to her new offspring characteristics which have been conveyed to her by the first sire. The phenomena of telegony may be explained in this way.

August 23rd.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Professor Koch in Rome.

IN modification of his programme Professor Koch is now in Rome. At the instance of his Excellency the Prime Minister, General Pelloux, who is also (significantly enough, after the bread riots), Minister of the Interior, he was met at the station by the Commendatore Santoliguido and Professor Gozio, both representing the Department of Public Health and both empowered to afford him every facility in the prosecution of his study of malarial fever. Thereafter he had an interview at the Palazzo Braschi with General Pelloux, whence, attended by Professor Gozio, he proceeded in company with his senior assistant, Dr. Pfeiffer, to the Santo Spirito Hospital and began immediately to make the requisite preparations for his researches. He examined many of the patients in the malarial fever wards and on leaving took with him specimens of the blood of the more typical cases. He then repaired to the laboratories connected with the Public Health Department, of which Professor Gozio is director, and with that gentleman's assistance selected the *locale* in which to conduct his experiments. These, it is understood, he will commence immediately, and will prolong his sojourn in Rome for another thirty days at least, or until they are satisfactorily completed.

August 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Artificial Respiration.

DR. ANTON BROSCH, in an article published in the *Archiv für Klinische Medicin*, gives an account of thirty-one experiments he has made in order to prove the possibility of the gastric contents being drawn into the lungs during artificial respiration. The greatest quantity of fluid which can be aspirated by artificial respiration amounts to 1210 c.c. The difference between experiments on the dead body and the conditions met with in the living subject is that aspiration of the gastric contents during artificial respiration is more easy in the living subject than in the dead body. The methods of artificial diaphragmatic respiration are the sources of the greatest danger. An experiment made by Dr. Brosch proved that even in the living subject when the stomach is full its contents may be pressed into the pharyngeal cavity by massage and that the cardiac orifice offers but a trifling resistance. An elastic tube introduced into the œsophagus will prevent the contents of the stomach from finding their way into the air passages and Dr. Brosch recommends that this precaution should be taken before artificial respiration is commenced.

Largin.

The *Medicinische Presse* of August 14th contained an interesting report by Dr. Kornfeld on largin, a new remedy for gonorrhœa. It is a greyish-white powder produced by the action of an ammoniacal solution of oxide of silver on an alcoholic solution of the dry product of decomposition of the paranucleoproteids. In a solution even of the strength of 1 in 4000 it kills gonococci in five minutes and is therefore certainly superior to either nitrate of silver or protargol. Dr. Pezzoli, who first made use of it, came to the following conclusions. Largin is of at least the same anti-gonorrhœal value as the other silver-albumin compounds and in its power of killing gonococci it is superior to them; it penetrates more deeply than they do into dead organic substances. These properties show that largin fulfils the most important conditions of an efficacious remedy against gonorrhœa as given by Neisser, killing the gonococci at an early period and entirely without increasing the inflammation of the mucous membrane or injuring the tissues or adding to the pain. Treatment ought to be commenced at an early stage in order to prevent the immigration of the gonococci into the deep parts of the mucous membrane, the connective tissue, and the glands. Largin checks the further proliferation of the gonococci and as it forms no precipitate with albumin it penetrates the tissues, unlike nitrate of silver, which immediately after application produces a film whereby the further penetration of the solution is hindered. Dr. Kornfeld has employed largin in 29 cases of gonorrhœa, in the first group of which, consisting of recent acute anterior urethritis, its success was very marked; the secretion decreased, the gonococci and the filaments disappeared, and the average duration of the treatment was thirty days. In one instance, however, there was an occurrence of slight subacute posterior urethritis during the injections. In the second group, in which the disease had already extended to the posterior part of the urethra and to the urinary bladder, largin caused a decrease but not a complete disappearance of the gonococci.

The third group comprised 6 cases of chronic forms of urethritis, some of which presented recent subacute exacerbations. The results showed that largin was superior to the other silver-albumin compounds. A valuable feature of the use of this remedy is the prevention of posterior urethritis.

Insurance against Sickness for Medical Men.

The German section of the Bohemian Medical Chamber is contemplating the formation of an association for providing financial assistance for medical men during illness. Members who are incapacitated by illness will be entitled to 4 gulden (about 8*s.*) daily during the first 140 days and to 3 gulden daily for the next six months. The preliminary circular remarks that the time has gone by when medical men earned enough by practice to make provision for their old age and that they must now be content to make a livelihood. The average income of the majority of medical men in that district is less than £90 a year.

August 22nd.

Obituary.

KAIKHOSRO NASARVANJI BAHADHURJI, M.D. LOND.

INFORMATION has been received of the death of Dr. K. N. Bahadhurji. The deceased, who was a young man at the time of his death, was M.D. of London and a very able physician. Some two years ago he worked in the most devoted way among the plague-stricken population of Bombay and was at the head of the first plague hospital erected in that city. He was an ardent advocate of Indian medical reform and was sent over here by his compatriots in 1896 to plead the cause of reform before the British Medical Association at Carlisle. He embodied his views in a pamphlet called "Medical and Sanitary Reforms in India," concerning which we said in a leading article[1]: "It seems reasonable, on grounds of justice and finance alike, that every effort should be made in the direction of enlarging the uncovenanted medical service, and we do not see why natives should not qualify in hygiene and public health and usefully fill many posts throughout the country." Dr. Bahadhurji was a master of fluent and easy English as well as being generally well read.

THOMAS FRANCIS I'ANSON, M.D. ABERD., L.R.C.P. LOND., M.R.C.S. ENG., J.P.

DR. I'ANSON of Whitehaven, who died at his residence there on August 19th, at the age of seventy-five years, was the oldest medical practitioner in West Cumberland. He was born in London, studied medicine at St. George's Hospital, and became qualified as M.R.C.S. Eng. and L.S.A. in 1846. In the same year he received the appointment of house surgeon to the Whitehaven and West Cumberland Infirmary, and in 1848 published in THE LANCET clinical reports of some of the cases which came under his observation in the fever wards. In due course he became consulting surgeon to the infirmary, an honourable office which he retained until the time of his death. Dr. I'Anson graduated as M.D. at King's College, Aberdeen, in 1848, received the diploma of L.R.C.P. Lond. in 1868, and was made a magistrate for Cumberland in 1888. His practice became very extensive and he held a prominent position among the medical men of the district. He was perpetual vice-president of the Cumberland and Westmorland Branch of the British Medical Association, and when the Association met at Carlisle in 1896 he was president of the Ethical Section and read a paper on the Better Management of a Provincial Infirmary.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board under the Five Years' Regulations in the subjects indicated:—

Part I., Chemistry and Physics:

Acres, George C. Johnstone.
Archer, Henry.
Archibald, Richard James.
Balme, Harold.
Bartlett, Edward Leslie.
Bateman, Ambrose Harold.
Battle, Charles John.
Beadnell, Herbert Owen Marsh.
Bellamy, Henry Francis.
Bent, Percy Claude Vincent.
Best, John Gordon de Graves.
Bishop, Thomas Henry.
Bourdas, John.
Bourns, Frank Grose.
Bradshaw, Gerald Arthur.
Bridges, Roland Harley.
Brown, Robert Dixon.
Bubb, Charles Henry.
Bush, William Henry.
Caton, John Wilfred.
Cheatle, William George.
Cleveland, John Wheeler.
Cole, Percival Pasley.
Corbin, John.
Cordner, Robert H. Lucas.
Couldrey, Thomas Reginald.
Cran, Hugh Rose.
Crozier, George R. Henderson.
Davis, Edward David.
Denyer, Clarence Hamul.
Dixon, Alban.
Dunkerton, Norman Edwin.
Eager, Mervyn.
Edwards, Kenelym Cobham.
Faulks, Edgar.
Featherstone, John Wilfred.
Fennell, Linton Albert.
Fiddian, Arthur Edwin.
Footner, Bertram Maughan.
Garrard, Edward Brown.
Glendining, Bryden.
Hallowes, Arthur.
Halsall, Cuthbert Murray.
Harris, Robert H. T. Penruddocke.
Harvey, Charles Walter Cowell.
Harvey, Frank.
Hawkins, William Lawrence.
Hesse, Harold William.
Hodgson, Ernest Charles.
Ingouville, John George.
Jays, Tom.
Johnson, Edwin Charles.
Jones, Hector.
Jones, Seymour Whitworth.
Lambert-Shea, William Albert.
Lister, Frederick Spencer.
Macphail, Frederick James.
Moon, Archibald Trevor.
Mummery, Stanley Parkes.
Neil, William Herbert.
Nettell, John Patten.
Nicholas, Cecil Francis.
Nicoll, Charles Vere.
Page, John H. Le Bouverie.
Palmer, Harold Thornbury.
Parsons, Edward Daniell.
Price, Ernest Anbrey.
Read, Harold William.
Redwood, Robert V. de Acton.
Reece, Charles Clement.
Roberts, Edmund Arthur.
Rudkin, Gerald Fitzgerald.
Sadler, Vyvyan Kendall.
Salt, Arthur Philip.
Scott, Harold Munro.
Segwin-Strahan, Stuart.
Sexton, Henry William.
Seymour, Charles Gibbons.
Smith, Thomas Morland.
Speechly, Alec John Lincoln.
Spencer, Sandy.
Stranger-Leathes, Hugh Ellis.
Tosswill, Leonard Robert.
Travers, Otho Boyle.
Turnly, John E. L. Alexander.
Walker, Frederick George.
Walker, Henry James Davey.
Walsh, George Delaval.
Welham, George Sydney.
Wickert, Jacob Hodgson.
Wilson, Norman Methven.

Part II., Practical Pharmacology:

Agar, Samuel Annesley.
Anthonisz, Alfred George Henry.
Arch, Arthur James.
Archer, Henry.
Aylen, Ernest Vaughan.
Bailey, William Arthur.
Ball, Charles R. Hamilton.
Bartlett, Ernest John Reeve.
Beane, Robert Leonard.
Beasley, Joseph Howard.
Bedford, Godfrey Henry.
Bellamy, Henry Francis.
Bennett, Henry Stagg.
Bennett, Kenneth Hugh.
Bond, Cecil William.
Brayne, Robert Edward.
Bridges, Roland Harley.
Burpitt, Harry Reginald.
Causton, Hubert Cyril.
Collins, Reginald Thomas.
Compton, Alwyne Theodore.
Crompton, Richard Henry.
Cronkshaw, John Alfred.
Davies, Walter E. Llewelyn.
Davis, Edward David.
Donaldson-Sim, Ernest Alfred.
Downton, Arthur Sydney.
Drabble, Percy Toplis.
Eastmond, Reginald Anthony.
Edwards, Thomas Henry.
Evans, George Jewel.
Ewen, Gerald Sydney.
Fiddian, Arthur Edwin.
Fitz-Henry, Roland S. Wyckham.
Fowler, Trevor Hayman.
Garrard, Edward Brown.
Gauntlett, Owen Binns.
George, Alexander Cosgrave.
Greaves. Herbert Stanley.
Grellet, Harold Rawdon.
Grenfell, Pascoe Beville.
Griffith, William Henry.
Griffiths, Edward Reginald.
Gromitt, John William.
Harris, Robert James.
Harrison, Gerald Woodforde.
Hawkes, Alfred E. Underwood.
Higgins, Hugh Arthur.
Hipwell, Harry.
Hughes, Guy.
Hughes, Edmund Octavius.
Humphrys, George Frederick.
Jackson, Francis Willan.
Jaques, Robert.
Jays, Tom.
Jones, Hector.
Jones, Reginald Lewis.
Jones, William W. Cadwaladr.
Keed, Charles Russel.
Kenderdine, Ernest Henry.
King, William Athol Desmond.
Kirkness, William Ronald.
Lambert-Shea, William Albert.
Lawry, Richard Coger.
Leclezis, George Joseph Alexis.
Lewis, David Thomas.
Lewis, Ivor.
Libby, Harold Samuel.
Lister, Frederick Spencer.
Lower, Charles Antony.
Luxmoore, Evelyn J. Hansler.
McIlroy, William.
Mason, Herbert Alfred.
Melhuish, Herbert M. Herny.
Miller, Arthur Alan.
Mills, Henry.
Morcam, Theophilus William.
Neville, Thomas Crofts.
Pallant, Santiago Luis.
Parbury, Frederick Denis.
Parsons, Wilfred.
Pearson, John Douglas.
Peel, Harold George.
Pierce, Frederick James.
Pierpoint, Harry.
Price, Clifford.
Redwood, Robert V. de Acton.
Row, Charlie Martin.
Sandiland, Digby Sayer.
Scatchard, Thomas.
Scott, Walter Henderson.
Sexton, Henry William.
Shenton, Edward W. Hine.
Smith, Edward Bertram.
Snoad, Francis George.
Stansfield, Walter.
Sykes, Walter.
Tetley, Thomas Walsh.
Thomas, Albert Edward.
Thomas, Robert John Percy.
Turner, Charles William.
Upcott, Harold.
Ward, Ernest Lewis.
Watson, Robert Nimms.
Webb, William Tudor.
Webster, James A. William.
Wenham, Herbert Victor.
Wetherell, Marmaduke C.
White, Cyril C. C. Kirke.
Wilshaw, Thomas Ratcliffe.
Winckworth, Harold Charles.
Winston, Gerold Denton.
Young, Alister Cameron.

[1] THE LANCET, Dec. 19th, 1896.

Part III., Elementary Biology:

Abbott-Brown, Charles F. M.	Jupp, Edgar Norman.
Archer, Henry.	Kenderdine, Ernest Henry.
Bailey, Lionel Danyers.	Lloyd, Robert.
Bain, William.	Low, Allan Douglas.
Bankes, John Herbert.	McCoy, Patrick William.
Bartlett, Owen Mortimer.	Macphail, Frederick James.
Bigg, Leonard Bolitho.	McQueen, John Falconer.
Bloxsome, Arthur Henry.	Marett, Philip Jaurrin.
Booth, Lawrence Twemlow.	Nimmo, Wilfred Cowan.
Buckeridge, Guys Leslie.	Niven, William A. Cyprus.
Camacho, Angelo.	O'Brien, Charles William.
Campbell, Thomas.	O'Neill, Arthur.
Canton, Claude Frederick.	Parsons, Geoffrey Owen.
Caton, John Wilfred.	Pick, Bryan.
Coltart, Charles H. Romer.	Power, Thomas Costello.
Cowper, Claude M. Lovell.	Priestly, Harold Edgar.
Crofts, Arthur Douglas.	Riviere, Bernard Beryl.
Daniels, Frederick William.	Shettle, Francis B.
Davis, Edward David.	Smith, Aaron Hoyland.
Drabble, Percy Toplis.	Snoad, Francis George.
Dunkerton, Norman Edwin.	Speechly, Alec. J. Lincoln.
Edmonds, Frank Rowe.	Steele, Otho F. William.
Elwood, William Henry.	Stewart, Howard Douglas.
Evans, George Jewel.	Sutton, Harry Chamberlain.
Everett, Hastings Footman.	Sykes, Joseph Harvey Kemp.
Fennell, Linton Albert.	Taylor, Martin Bramley.
Footner, Bertram Maughan.	Tilley, James L. Octavius.
Griffith, William Henry.	Vidal, Hugh Francis.
Gunning, Charles J. Hope.	Wall, James Marsden.
Hawkins, William L.	Wallis, Harold Wishaw.
Hayman, George Atkin.	Walters, Arthur Leslie.
Hill, Ludovic.	Welch, Samuel H. Rexford.
Huggins, Hugh Morley.	Williams, James Alexander.
Hughes, Guy.	Williams, John.
Hunter, Mark Oliver.	Wilmot, Reginald Cameron.
Ibbotson, William.	Wingent, Ralph Moignard.
Ireland, James Aubrey.	

The following gentlemen passed under the Four Years' Regulations:—

Part. I., Chemistry, including Chemical Physics:

Ewing, James.	Cooke, Percy Seymour.

Part II., Materia Medica:

Ewing, James.	Safford, Arthur Hunt.
Booth, James Augustus.	Topham, Frederick Stocks.

SOCIETY OF APOTHECARIES OF LONDON. — In August the following candidates passed in the subjects indicated:—

Surgery.—H. A. Ahrens, King's College Hospital; M. E. Bennett (Section II.), Royal Free Hospital; E. Fryer, Guy's Hospital; J. E. W. McFall (Sections I. and II.), Liverpool; R. O. Jones and E. MacD. Judge, Guy's Hospital; and O. T. A. Phillips, Cardiff and London Hospital.

Medicine.—F. Atthill (Section II.), Charing-cross Hospital; W. H. I. Bathurst (Section I.), London Hospital; H. R. Cross, Leeds; J. J. Huey, Glasgow; J. Jones, Edinburgh; J. E. W. McFall (Sections I. and II.), Liverpool; R. G. W. Saint-Cedd, Guy's Hospital; W. J. Schuller (Section II.), London Hospital; N. Walmisley, St. Bartholomew's Hospital; J. Welsh, Dublin; and R. Le G. Worsley (Section I.), St. George's Hospital.

Forensic Medicine.—W. H. I. Bathurst, London Hospital; H. R. Cross, Leeds; H. Greenwood, London Hospital; J. J. Huey, Glasgow; J. E. W. McFall, Liverpool; R. G. W. Saint-Cedd, Guy's Hospital; D. C. M. Shaw, Manchester; N. Walmisley, St. Bartholomew's Hospital; J. Welsh, Dublin, and R. Le G. Worsley, St. George's Hospital.

Midwifery.—J. M. Anderson, Aberdeen; E. C. W. Beasley, St. Mary's Hospital; R. Brookes, Westminster Hospital; T. S. Elliot, London Hospital; D. Fletcher, St. Bartholomew's Hospital; H. Greenwood, London Hospital; J. E. Griffith, St. Bartholomew's Hospital; and J. Welsh, Dublin.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—H. A. Ahrens, F. Atthill, M. E. Bennett, E. Fryer, O. T. A. Phillips, and D. C. M. Shaw.

MEDICAL MAGISTRATES. — Mr. William H. Cocker, M.R.C.S. Eng., has been appointed a magistrate for Blackpool.—Mr. Chas. J. Kearney, L.R.C.P. Lond., M.R.C.S. Eng., of South Grafton, New South Wales, has been appointed a magistrate for that colony.

PRESENTATION TO A MEDICAL MAN.—Mr. David Collingwood, M.D. Lond., F.R.C.S. Eng., of Summer-hill, near Sydney, New South Wales, was on June 23rd last entertained at a dinner by his professional and other friends, and presented with a travelling bag, fitted with gold-mounted accessories, on his leaving the district.

THE INFANT LIFE PROTECTION ACT.—The value of the Infant Life Protection Act was tested for the first time in Bristol on August 18th, when a woman was sent to prison for six weeks for having in her custody two children to be nursed and maintained apart from their parents without notice of the fact having been given to the Bristol Board of Guardians.

CHARITABLE BEQUESTS.—The late Mrs. Howard of Blackpool, whose will was recently the subject of some remarkable litigation, left the following local bequests: to the Boys' and Girls' Refuges and the Deaf and Dumb Institute, each £100; to the Blackpool Hospital, £2000; and, to the Devonshire Hospital, Buxton, £1000. She also left about £16,000 to religious institutions.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BARRINGTON, F., M.B. Edin., F.R.C.S. Eng., has been appointed an Honorary Surgeon for the Lewisham Hospital for Women and Children, Sydney, New South Wales.

BEESLEY, A. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Baschurch and Middle Sanitary Districts of the Ellesmere Union.

BELDING, D. T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Mitford and Launditch Rural District, vice M. G. Dundas, resigned.

BONE, BERTRAM MAYHEW, M.B., C.M. Edin., has been appointed Medical Officer by the Towyn and Aberdovey (Merionethshire) Urban District Council, vice F. H. V. Grosholz, deceased.

CLOTHIER, HENRY, M.D. Lond., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health by the Hornsey Urban District Council.

COCKBURN, the Hon. J. A., M.D. Lond., M.R.C.S., has been appointed Agent-General for South Australia, vice the Hon. T. Playford, resigned.

DUNCAN, S. V., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for the Urban and Suburban Districts of Menzies, Western Australia.

ELLIS, R. K., M.B., B.Ch. Oxon., has been appointed Medical Officer for the Lowdham Sanitary District of the Southwell Union.

EVANS, J. JAMESON, M.B., C.M. Edin., M.R.C.S. Eng., has been appointed Honorary Surgeon to the Birmingham and Midland Eye Hospital, vice D. C. Lloyd-Owen, resigned.

FOX, S. C. GUNDRY, M.R.C.S., L.R.C.P. Lond., has been appointed Senior District Surgeon to the Perak Federated Malay States, vice J. L. Welch, deceased.

GILL, J. MACD., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed an Honorary Assistant Physician for the Hospital for Sick Children, Sydney, New South Wales.

GORDON-MUNN, J. G., M.D., C.M., F.R.S.E., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the Watford, Barnet, St. Albans, and Chesham County Court Districts, and also to act for the Luton and Leighton Buzzard Districts.

HANDLEY, W. S., M.D. Lond., B.S., F.R.C.S., L.R.C.P., M.R.C.S., has been appointed Dental Anæsthetist and Anæsthetist for the Ophthalmic Department of Guy's Hospital, S.E.

HARDING, R. F., L.R.C.P., L.R.C.S. Irel., has been appointed, *pro tem.*, acting Medical Superintendent for the Hospital for the Insane at Toowoomba, Queensland.

HAWTHORNE, E. S., L.R.C.P. and L.M., L.R.C.S.I. and L.M., has been re-appointed Surgeon to the Etheridge District Hospital, and Medical Officer of Health for the District of Georgetown, Queensland, Australia.

HIRSCHFELD, E., M.D. Strasburg, has been re-appointed an Honorary Medical Officer for the Brisbane Hospital, Queensland.

JONES, MARTIN LLEWELLYN, F.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Lond., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the districts of Merthyr Tydvil, Aberdare, and Pontypridd.

KENNEDY, J. M. P., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Referee for King's County under the Workmen's Compensation Act, 1897.

KITSON, F. P., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Marshwood and Netherbury Sanitary Districts of the Beaminster Union.

LAWSON, G. L. L., M.R.C.P. Edin., M.R.C.S., D.P.H., has been appointed a Public Vaccinator for the Urban and Suburban Districts of Yalgoo, Western Australia.

LEISHMAN, ARCHIBALD, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Medical Officer for the Thorncombe District of the Beaminster Union, Dorset.

LETHBRIDGE, C. F., M.R.C.S., has been appointed Officer of Health for the North and West Ridings of Ripon Shire, Victoria, Australia, vice B. J. Adam, resigned.

LONERGAN, T. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for South Australia.

MAIR, L. W. D., M.D. Lond., L.R.C.P., M.R.C.S., D.P.H., has been appointed, *pro tem.*, a Medical Inspector under the Local Government Board.

MARES, the Hon. C. F., M.D. Irel., L.K.Q.C.P., L.R.C.S., has been re-appointed an Honorary Medical Officer for the Brisbane Hospital, Queensland.

MIDDLETON, W. H., L.R.C.P., L.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Westmeath.

MITCHELL, A. B., M.B., B.Ch. Irel., has been re-appointed an Assistant Surgeon for the Royal Hospital, Belfast.

MORGAN, C. W., M.D. Brussels, L.R.C.P. Lond., L.F.P.S. Glasg., has been appointed a Government Medical Officer and Vaccinator for the District of Eden, New South Wales.

MULLEN, W. L., M.D., Ch.B. Melb., has been appointed, *pro tem.*, acting Medical Superintendent for the Sunbury Lunatic Asylum, Victoria, Australia.

OLIVEY, W. J., L.R.C.P. Lond., M.R.C.S., has been appointed Health Officer for Lawlers, Western Australia.

O'NEILL, H., M.D., M.Ch. Irel., has been re-appointed a Surgeon for the Belfast Royal Hospital.

POWELL, H. A., M.B., Ch.B. Adel., has been appointed Medical Officer for Kadina, South Australia.

REYNOLDS, J. H., M.B., C.M. Edin., has been appointed Senior House Surgeon to the Miller Hospital, Greenwich.

SCHAUB, J. M., L.R.C.P. Lond., M.R.C.S., has been appointed Senior Assistant Medical Officer for the Infirmary and Workhouse of the Parish of St. Leonard, Shoreditch.

SMALLMAN, A. B., M.B., Ch.B. Vict., has been appointed a Junior House Surgeon for the Royal Hospital, Salford.

SPRIGGS, E. J., M.B. Lond., has been appointed a Demonstrator of Physiology, Guy's Hospital, S.E., vice F. G. Hopkins.

STREET, A. E., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer for the Dyffryn Aled branch of the Cheadle Royal Lunatic Hospital.

TAYLOR, the Hon. W. F., M.D. Kingston, Canada, M.R.C.S., has been re-appointed an Honorary Medical Officer for the Brisbane Hospital, Queensland.

TAYLOR, F. R. P., M.D. Lond., B.S., L.R.C.P., M.R.C.S., has been appointed Medical Superintendent for the Darenth Adult Asylum of the Metropolitan Asylum District.

WHITLA, W., M.D. Irel., L.R.C.P., L.R.C.S. Edin., has been re-appointed a Physician for the Belfast Royal Hospital.

WILLIAMS, J. C., M.B., C.M. Edin., has been appointed an Honorary Physician for the Church Army's Mission Nurses' Training Home, Nutford-place, W.

WILSON, G. B., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Officer for the Destitute Poor for the Township of Port Germein, South Australia.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £50 per annum, with apartments and board.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £60 per annum, with board and lodging, but no wine, spirits, or beer.

CARDIFF INFIRMARY. — Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARNARVONSHIRE AND ANGLESEY INFIRMARY, Bangor.—House Surgeon. Salary £80 per annum, with board, washing, and lodging in the house.

COSFORD UNION, Suffolk, Lavenham District.—Medical Officer and Public Vaccinator for the Lavenham District. Salary £52 2s. exclusive of the usual extra medical fees, but certain medicines and surgical appliances to be supplied at the cost of the officer appointed. Applications to the Clerk to the Guardians, Union Offices, Hadleigh, Suffolk.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon for six months. Board, residence, &c., provided, and an honorarium of £25 given conditionally.

GUEST HOSPITAL, Dudley.—Resident Medical Officer. Salary commencing at £100 per annum, increasing by £10 a year to £120 (conditionally), with board, residence, attendance, and washing.

KENT COUNTY ASYLUM, Chartham, Canterbury. — Third Assistant Medical Officer. Salary £120, with board, &c.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the hospital.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Residence in the hospital, board, and washing provided, and an honorarium of five guineas given conditionally.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per year, with board and washing free.

NORFOLK AND NORWICH HOSPITAL, Norwich. — Assistant House Surgeon for six months. Board, lodging, and washing provided.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House Surgeon. Salary £120 per annum, increasing by £10 per year (conditionally), with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY. — Clinical Assistant for six months (renewable), unmarried. Salary £60 for that period. Subject to boarding arrangement.

PARISH OF ST. GEORGE-IN-THE-EAST, London.—Assistant Medical Officer for the Infirmary and Workhouse. Salary £120 per annum, with rations and apartments. Subject to the provisions of the Superannuation Act, 1896. Applications to the Clerk, Guardians' Offices, Raine-street, Old Gravel-lane, E.

PARISH OF ST. GILES, Camberwell.—Assistant Medical Officer for the Workhouse, Gordon-road, Peckham. Salary £120 per annum, with furnished apartments outside the Workhouse, and an allowance of £1 1s. weekly in lieu of board and washing. Applications to the Clerk to the Guardians, Guardians' Offices, 29, Peckham-road, S.E.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £30 per annum, board and washing provided.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon for one year. Salary £60 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—House Physician for one year, unmarried. Board (exclusive of wine and beer) and lodging provided, and an honorarium of 25 guineas given.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Board and residence provided, and an honorarium of £10 given.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon, and to act as Secretary. Salary £60, with board and lodging.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Secretary and Registrar, University College, Cardiff.

UNIVERSITY OF ST. ANDREWS.—Professor of Midwifery.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £60, with board and residence.

Births, Marriages, and Deaths.

BIRTHS.

BEVEN.—On August 23rd, at Balham-grove, Balham, S.W., the wife of Octavius Beven, M.D., D.P.H., of a daughter.

BRITTAIN.—On August 16th, at Triangle House, Hatfield, the wife of Percy M. Brittain, Surgeon, of a daughter.

DOVE.—On August 20th, at Parkside, Crouch-end, the wife of Augustus C. Dove, M.D., of a daughter.

PANTIN.—On August 20th, at Albert-terrace, Douglas, Isle of Man, the wife of C. S. Pantin, M.D., F.R.C.S., of a daughter.

RAW.—On August 19th, at Superintendent's House, Mill-road Infirmary, Liverpool, the wife of Nathan Raw, M.D., of a son.

SMITH.—On August 21st, at Dyne-road, Brondesbury, N.W., the wife of J. Anderson Smith, M.D., of a son.

SMITH.—On August 16th, at Orpington, Kent, the wife of A. T. Smith, M.D., of a daughter.

WILLIAMS.—On August 21st, at Brockley, S.E., the wife of Chisholm Williams, F.R.C.S. Eng., of a daughter.

MARRIAGES.

EDMONDSON—ROBSON.—On August 24th, at Egremont Presbyterian Church, by the Rev. James Muir, D.D., Charles Reginald Edmondson, M.B., C.M., of Wavertree, Liverpool, to Ethel, youngest daughter of Stephen Robson, Egremont, Cheshire.

GERRARD—REPTON.—On July 30th, at St. Joseph's Church, Rawul Pindi, Punjaub, India, Major J. J. Gerrard, M.B., Royal Army Medical Corps, to Mabel Kathleen, only daughter of the late Colonel Herbert Mills Repton, Bengal Staff Corps.

HAMLEN-WILLIAMS—RENWICK.—On August 22nd, at All Saints' Church, St. Helier's, Jersey, T. R. Hamlen-Williams, M.R.C.S., L.R.C.P., of Fairfield, Pontypridd, Glam., to Emily Sarah, youngest daughter of the late James Renwick of Bala, North Wales.

HELME—CROFTS.—On August 17th, at the Wesleyan Church, Alderley Edge, by the ex-President of the Conference, Rev. W. L. Watkinson, assisted by Rev. William George and Rev. A. L. Vine, T. Arthur Helme, M.D., M.R.C.P., F.R.S. Edin., of Manchester, son of the late James Helme, of Lancaster, to Florence Jane, elder daughter of the late James Crofts, of Tipton, and Mrs. Crofts, of Alderley Edge.

JACOB—DAY.—On August 18th, at Christ Church, Woburn-square, London, Archibald H. Jacob, L.R.C.S. and L.R.C.P. Ireland, third son of A. H. Jacob, M.D., F.R.C.S.I., Dublin, to Alice Maud, only daughter of Joseph Addison Day, Esq., late of Weston Manor, Corscombe, Dorset.

MAGUIRE—BLISSETT. — At St. Mary's, Bryanston-square, W., on August 14th, Robert Maguire, M.D., F.R.C.P., to Miss Mary Blissett, daughter of the late Thomas Blissett, Esq., of Oxton, Cheshire.

DEATHS.

BLACKMAN.—On August 23rd, at Mostyn, Streatham, Frederick Blackman, M.R.C.S., L.S.A., aged 66 years.

BARROW.—On August 20th, at Guy's Hospital, C. A. G. Barrow, L.R.C.P. Edin., M.R.C.S., of Sutton, Surrey, aged 47.

I'ANSON.—On August 19th, at Whitehaven, Thomas Francis I'Anson, M.D., J.P., aged 73.

SMITH.—On August 10th, at Lodge Park, Freshford, Kilkenny, Ernest Frederic Smith, Major R.A.M.C. retired, of Grove House, Lavenham, Suffolk.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 25th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 19	30·03	S.E.	0·02	111	81	62	65	68	Overcast
,, 20	30·11	WSW	...	117	84	62	63	67	Fine
,, 21	30·19	S.E.	...	118	82	62	66	70	Hazy
,, 22	29·96	S.E.	0·03	125	90	64	66	68	Overcast
,, 23	30·02	W.	...	116	80	62	62	66	Cloudy
,, 24	30·13	N.E.	...	112	74	59	58	61	Fine
,, 25	30·24	S.E.	...	107	70	58	56	61	Cloudy

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

NE SUTOR ULTRA CREPIDAM.

WE have received from a correspondent a small pamphlet published by a manufacturer of artificial limbs. The articles, if we judge by sundry testimonials, seem very perfect in their way, but there is a passage in the pamphlet to which we must strongly take exception. The passage in question is headed "Observations on Amputations from an Artificial Limb-maker's Point of View," and it goes on to suggest that "the less taken off the better" is not always the best policy. This is no doubt true from the limb-maker's point of view, but he has no right as he does in this pamphlet to say: "When a knee has to be sacrificed the amputation should if possible be performed about four inches above the kneejoint," and still more presumptuous ignorance is shown in the remark, "A portion of an injured hand should never be left, as it is perfectly useless to the patient." It is not the business of an instrument-maker to advise a surgeon how much or how little he shall remove, and such advice is merely a piece of impertinence.

ASSES' MILK.

PHYSICIANS of every age and nationality have commended the milk of the ass as an excellent succedaneum for woman's milk, but according to the following published opinion one eminent authority has come to a precisely opposite conclusion. "The asses' milk which I experimented on," says M. Duclaux, the Director of the Pasteur Institute, "was obtained from one of the droves which are taken round to patients' doors in Paris. It will be seen how little milk so obtained is to be depended on, notwithstanding its enormous price. The specimen which I analysed was very transparent and contained (*a*) substances in suspension: fatty matter, 1·00; casein, 0·99; phosphate of lime, 0·06; (*b*) substances in solution: sugar of milk, 6·54; casein, 0·34; phosphate of lime, 0·10; soluble salts, 0·27. Deducting the sugar, which in milk constitutes two-thirds of the dry residue, it will be seen that in spite of its ten-fold cost this milk is not more than one-third as valuable as cow's milk." Replying to this attack, M. Variot writes to the following effect: "Such a condemnation cannot be final but must admit of an appeal, being founded on one analysis only, which, with regard to butter and casein, is in conflict with the analyses of Féry and Gautrelet. And, moreover, if asses' milk is more easily assimilated than cows' milk by certain debilitated nurslings it is precisely on account of its lightness and poverty in casein. The excess of protein substances in cows' milk, which causes American physicians so much anxiety, is not to be dreaded in asses' milk. M. Duclaux may say, if he pleases, that as a cheese producer asses' milk is valueless by reason of its lack of casein, but the fact, nevertheless, remains that for puny children deprived of the breast it is the very best substitute for their natural food." Doubtless this view will obtain most suffrages. Such, at least, is the opinion of an anonymous commentator, who exclaims, "We are on the side of M. Variot and clinical experience against M. Duclaux and chemistry. Yes, asses' milk is unquestionably the proper succedaneum for maternal milk and that precisely because, like woman's milk, it is poor in casein."

A COURTEOUS SUGGESTION.

THE *Daily Mail* of August 24th publishes the following letter:—

"CHEMISTS AND DOCTORS.

"A subject that affects the interest of the public to a momentous extent is that of dispensing by doctors. At present it can be used in the hands of the unscrupulous to smother crime.

"There is not the division of labour between the doctor and the chemist there should be. The doctor should prescribe and the chemist dispense, and there ought to be no departure from this rule. At present, dispensing by the chemist is the exception, save in the West-end of London and fashionable resorts.

"In 1868 the Pharmacy Act came into force, wherein it decreed that before a chemist be permitted to dispense and sell scheduled poisons he must prove himself capable by passing a very stringent and searching examination in chemistry, pharmacy, materia medica, and dispensing. Since then 90 per cent. of the chemists have passed these examinations, yet the bulk of dispensing is done by the doctors, who have but a smattering of the art.

"The gravest point is this, that through inadvertence or by design the medical man may send medicine improperly dispensed, or containing some poisonous drug by which his patient becomes very ill or dies. In the one case he can explain his error away; but in the latter he can sign the death certificate and for ever hush up the true cause of decease. "JOSEPHUS."

We call this an infamous insinuation. Of course it is possible that a medical man may poison his patient either "through inadvertence or design"—anything is possible. For all we know "Josephus" may be a criminal of the deepest dye, but it is more probable that he is a struggling dispensing chemist.

NEWS FROM FRANCE.

(NOT FROM OUR CORRESPONDENTS.)

WE confess to being lost in doubt whether the articles from the *Journal de Médecine de Paris* translated extracts from which we subjoin are intended as examples of *esprit* or of "wut." They cannot be serious. Is it that the writers, after visiting the northern capital, have sought to combine the two—to serve up a sort of humorous *gâchis*, as it were a haggis flavoured with absinthe?

"OUR DOYEN IN LONDON.

"The above headline does not refer to the *doyen* of the Faculty of Medicine, but to the gentleman who hails from Reims. The lay press informs us that M. Doyen, that Napoleon of surgery, was summoned to London in order to perform several operations of the gravest possible description. The illustrious surgeon was presented to the Princess of Wales and exhibited his operative procedure with the utmost success before numerous English surgeons and also before the students of St. Mary's Hospital. The patients he operated on are all progressing most favourably. The Queen of England sent to ask M. Doyen if he was willing to accept a post as Her Majesty's Surgeon in Ordinary with a salary of 10,000 'guinées' per annum; but our compatriot refused, being unwilling to deprive France of his services. Upwards of two-thousand English medical men made a point of accompanying M. Doyen when he left. He promised to take part in the Congress of the British Association at Edinburgh, and the moment the news became known the hotel tariff in the Scottish capital was trebled."

The following announcement is taken from the same source. Its humorous character is not so obvious:—

"*Necrology.*—Lord Playfair, Commander of the Legion of Honour, sometime Professor of Chemistry at Manchester, at Edinburgh, and at Saint-Andrews, one of the most distinguished of hygienists, has just succumbed at the age of 79 years. Formerly vice-president of the House of Commons, formerly Minister of Public Instruction in one of the Gladstone ministries, Lord Playfair was raised to the peerage in 1892. But this accoucheur was above all celebrated through the misadventure which befel him two years ago when he was condemned to pay a quarter of a million francs damages for having unduly disclosed the fact that one of his patients had had a miscarriage."

THE BONE-SETTER AGAIN.

MR. A. T. SHEPHERD, deputy coroner, held an inquest at Gateshead on August 18th to inquire into the circumstances of the death of Isabella Keenan, aged thirteen years. It appeared in evidence that she had been ill for three weeks and was attended by Dr. Arthur Green. Then she was taken to a bone-setter, but she got worse. Dr. Green was sent for again on a Friday but the girl died on the following Wednesday. Clayton, the bone-setter, said that he found that the muscles of the right leg were contracting. He "eased them down" and put on a bandage. Her back had been blistered. Dr. Arthur Green said that when he first saw the girl she had severe bruising of the muscles of the back, and had been blistered over the loins. When next he saw her she had a large gangrenous patch upon the back and was crying; she had pneumonia as well. He considered the gangrene was due to the over-tight bandaging. The coroner said that Clayton had been negligent, though he did not think criminally negligent. Probably if Dr. Green had had charge of the case all through the poor girl would not have died. The jury considered that Clayton had been negligent and ought to have called in a medical man. The death was due to the causes enumerated in the medical evidence. We make no comment upon this case, for it is of no use. This is a free country and practices of this description are quite legal.

THE TITLE OF "DR."

To the Editors of THE LANCET.

SIRS,—I am a Bachelor of Medicine of the University of Cambridge, also a Bachelor of Surgery and Bachelor of Arts. Am I right in having inscribed upon my doorplate and visiting cards simply "Dr. X"? This has been called in question by some of my fellow practitioners, who contend that as I am only a Bachelor of Medicine I have no right to style myself "Dr." I know it is the custom of Cambridge and Oxford Bachelors of Medicine to style themselves "Dr.," but I should be very pleased to have your authority to point to, which would, of course, end the matter at once. I am, Sirs, yours faithfully,

August 22nd, 1898. X.

*** It is usual for a Bachelor of Medicine to style himself "Dr." and we have not before heard any objection to the custom from his professional brethren. Our correspondent is referred to THE LANCET of August 17th, 1895, where the subject is discussed at length in a leading article.—ED. L.

THE LATE ARTHUR JEFFARES BARLOW.

IT has been decided to keep the appeal on behalf of the widow of the late Mr. Arthur Barlow open for a short time longer. Mr. R. H. Capper, of Buckholt, Battle, Sussex, who will receive subscriptions, asks us to acknowledge the receipt of the following contributions:—Far away, £5 5s.; Mr. Snook, Weymouth, per Dr. Henry, £2.

PROSECUTION OF PECULIAR PEOPLE.

ON August 24th a carman and his wife, named Cook, were committed from the Lambeth Police-court for trial on a charge of the manslaughter of their child. The prisoners are Peculiar People and the child had been ill for six weeks with no medical attendance. An "elder" had, however, anointed the child and prayed over it. Medical evidence showed that the death was due to broncho-pneumonia.

A HERBALIST IN TROUBLE.

AT Norwich, on August 23rd, Mr. Samuel Matthews, a former member of the town council of the city, was fined £1 by the magistrates for unlawfully using the title of "Surgeon." On the following day Mr. Matthews, who was a medical herbalist, was fined £20 in the county-court at the suit of the Society of Apothecaries of London for illegally acting as an apothecary. Mr. Matthews's counsel called the prosecution "persecution," but was informed by his honour Judge Willis in giving judgment that he could see no persecution in the matter; it was most important that persons who undertook the care of other people's health should be duly qualified. We quite agree, but unfortunately the law does not. A summons for illegally using the title of "Doctor" was dismissed.

"ETHERION."

THE New York correspondent of the *Standard* announces the discovery by Mr. Charles Brush of an exceedingly attenuated gas to which has been given the name of "etherion." It would appear to invade all interstellar space and may prove to be the "matter" or "ether" by the vibrations of which alone can many physical phenomena be explained. It occurs in the atmosphere and its density is one-thousandth of that of hydrogen. If this announcement—which was made at a meeting of the American Association of Science—be correct we would appear to be approaching the discovery, or even isolation, of Crookes's "protyle," the primordial element.

A. J. G. entered into a bond and he must keep the terms thereof whether the other party to the agreement be a layman or not. We quite agree with him that it is inadvisable for a medical man to become a servant of these lay associations—we have said so over and over again—but we cannot advise that an agreement once entered into should not be kept.

Public Health is requested to send his name and address—of course not for publication—and also the name and date of the newspaper wherein the report appeared. We will then make a note of the matter if it seems to us that to do so will be useful.

Emigrant.—The regulations governing medical practice in America vary in the different States. Full information will be found in THE LANCET of Sept. 12th, 1896, page 769, and also in our issue o Oct. 3rd of the same year, page 969.

M. G. Y. B.—We do not as a rule publish letters which have already appeared elsewhere.

Percy.—We do not recommend treatment.

F.R.C.S. must verify his references.

H. S. should consult a lawyer.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.) St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

During the week marked copies of the following newspapers have been received: *Birmingham Gazette, Nottingham Express, North Herts Journal, Luton Reporter, Walsall Observer, Torquay Times, Wilts Standard, Ilfracombe Chronicle, Times of India, Pioneer Mail, Warwick Advertiser, Architect, Citizen, Scotsman, Builder, Liverpool Daily Post, High Peak News, Driffield Observer, Leeds Mercury, Wigan Examiner, Derby Times, Ampthill News, Harrogate Advertiser, Bristol Mercury, South Wales Daily News, Eastern Morning News, Croydon Guardian, Bridgwater Independent, Yorkshire Post, Chester Chronicle, East Essex Times, Lynn News, Lancashire Express, Manchester Guardian, Western Morning News, Newcastle Journal, Cheltenham Mercury, Hereford Times, Lancaster Guardian, North Middlesex Chronicle, Worcestershire Echo, Sanitary Record, Mining Journal, St. Bartholomew's Hospital Journal, City Press, Reading Mercury, Hertfordshire Mercury, Observer and Chronicle (Bournemouth), Local Government Chronicle, Guy's Hospital Gazette, Surrey Advertiser, Redditch Indicator, Local Government Journal, Australasian Medical Gazette, Forres Gazette, Falkirk Herald, Brecon County Times, Buckingham Express, Freeman, Exmouth Journal, Sleaford Journal, Market Rasen Mail, School Guardian, Aberystwyth Observer, Cromer Post, Grantham Journal, Harwich Chronicle, Kendal County News, Dover Express, Andover Advertiser, Loughborough Monitor, Western Daily Press, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Mr. H. Ainsworth, Lond.; Dr. Altschul, Lond.; Messrs. C. Ash and Sons, Lond.; Messrs. Allen and Hanburys, Lond.; Messrs. Armbrecht, Nelson, and Co., Lond.; Mons. J. Astier, Paris; Messrs. Armour and Co., Lond.

B.—Mr. W. H. Bennett, Lond.; Dr. Robert Barnes, Lyss; Mons. O. Berthier, Paris; Borough Hospital, Birkenhead, House Surgeon of; Mr. L. Browne, Lond.; T. B. Browne, Ltd., Lond.; Dr. E. C. Baker, Brighton; Mr. C. Birchall, Liverpool; Mr. C. K. Bond, Lond.; Mr. R. Baker, Lond.; Dr. A. G. Bagshawe, Dorchester; Dr. R. W. Baxter, Bromley; Mr. R. Fitzroy Benham, Lond.; Messrs. W. H. Bailey and Son, Lond.; Mr. J. Briggs, Lond.

C.—Mr. C. Carrington, Paris; Mr. Thos. S. Carter, Leeds; C. D., Leamington; Carnarvonshire Infirmary, Bangor, Secretary of; Messrs. J. and A. Churchill, Lond.; Mr. T. Cooke, Lond.; Messrs. A. H. Cox and Co., Brighton; Messrs. Cooper and Co., Lond.; Mr. H. Cox, Lond.; Cortland Wagon Co., Lond.; Mr. Coxon, Wisbech; Coachman, Bangor; Messrs. Cuff Bros., Dover; Messrs. Caldwell, Muir, and Caldwell, Paisley.

D.—Mr. J. J. Donald, Perth; Messrs. Down Bros., Lond.; D. A. B.; *Dublin Journal of Medical Science*, Editor of; Devon Hospital, Hon. Secretary of.

E.—Mr. J. J. Evans, Birmingham; E. M. C.

F.—Dr. W. Forbes-Leslie, Brussels; F. E. S.; Formalin Hygienic Co., Lond.

G.—Dr. F. S. Gramshaw, Stillington; Mr. A. G. Gore, Chester; Good Health Publishing Co., Battle Creek, U.S.A.; General Medical Council, Registrar of.

H.—Mr. J. Hartley, Fairstead; Messrs. Hertz and Collingwood, Lond.; Dr. W. Horrocks, Bradford; H. F. P.

J.—Mr. J. W. Jarvis, Southsea; Messrs. Jones Bros., Clifton; *Journal des Praticiens*, Paris, Director of.

K.—Messrs. Kilner Bros., Lond.; Messrs. Keith and Co., Edinburgh.

L.—Mr. W. Lubeck, Lond.; Dr. Arthur P. Luff, Haslemere; Mr. C. E. Livesay, Lond.; Mr. J. W. Leake, Lond.; Messrs. E. and S. Livingstone, Edinburgh.

M.—Dr. A. Morison, Lond.; Mr. C. Macmillan, Nottingham; Mr. N. Minahon, Lond.; Madras Medical College, Principal of; Messrs. McKesson and Robbins, New York, U.S.A.; Messrs. E. and J. L. Milner, Lancaster; Military Department, India Office, Secretary of; Dr. F. H. Maberly, Courtmacsherry; Matto, Ltd., Lond.; Mr. G. Makin, Hadleigh; Mr. M. R. Morrissey, Thurles.

N.—Mr. J. O. Neumann, Lond.; Norfolk and Norwich Hospital, Norwich, Secretary of.

O.—Messrs. J. Owen and Co., Carnarvon.

P.—Messrs. J. Poe and Son, Kilkenny; Messrs. Parke, Davis, and Co., Lond.

R.—Mr. E. J. Reid, Lond.; Messrs. Robertson and Scott, Edinburgh; Dr. N. Raw, Liverpool; Dr. R.; Royal United Hospital, Bath, Secretary of.

S.—Mr. R. Stoney, Lond.; Mr. H. H. Scott, Lond.; Mr. J. Spears, Burton-on-Trent; Mr. A. Stenhouse, Glasgow; Sanitas Co., Lond.; Sheffield Royal Hospital, Secretary of; Mr. J. Scrimgeour, Glasgow; Messrs. Street and Co., Lond.; Smith's Advertising Agency, Lond.

T.—Dr. A. S. Taylor, Surbiton; T. L.; Messrs. Taylor, Honman, and Co., Lond.; T. J. C.; Dr. T.

U.—University College, Dundee, Secretary of.

W.—Mr. A. Woodforde, Ramsbottom; Western General Dispensary, Hon. Secretary of; Messrs. Wright, Dain, and Co., Bristol; Messrs. J. Wright and Co., Bristol; Mr. C. J. Walker, Lond.; Mr. W. Wingrave, Lond.; Dr. D. A. Welsh, Edinburgh; Mr. W. Roger Williams, Bristol; Mr. F. Wilson, Lond.

Letters, each with enclosure, are also acknowledged from—

A.—A. B., Taunton; A. H. W. A.; A. H., Cambridge; A. G. S.; A. L. P.; A. L.; A. A. P.; A. K.; A. L. T.

B.—Mr. J. Beckton, Lond.; Mr. L. M. Buckell, Ditchling; Dr. B.; Captain H. H. T. Brooking, Lavenham; Messrs. Brown, Gould, and Co., Lond.; Mr. J. W. Bird, H.M.S. *Alexandra*, Portland; B. 145, Lond.; Bleasdale, Ltd., York.

C.—Mr. F. Cotton, Southend-on-Sea; C. S.; Dr. P. M. Chapman, Hereford; C. J. S.; C. H.

D.—Mr. J. W. Davies, Ebbw Vale; Doctor, Bedlington; D. A. C.; Dr. E. T. Davies, Liverpool; D. F. S.; *Devon and Exeter Daily Gazette*, Exeter, Manager of.

E.—Dr. E. A. Edelsten, Oban; M. K. Evans, Bexley; E. W. S.

F.—Mr. P. R. Fort, Lond.; Miss A. Frith, Lond.; F. J. R.; F. D. F.; Dr. H. Fischer, Paris; F. T.; Dr. J. G. FitzGerald, Cork.

G.—Dr. D. P. Gardner, Beighton; Mr. J. H. Goldwin, Rochester; G. A. K.

H.—Mr. J. Heywood, Manchester; Mr. T. W. Hime, Bradford; Heathcote-street (9), Gray's-inn-road; H. B. D.; H. C. L.; Mr. V. X. Harcourt, Maidstone; Mr. A. Hodge, Manchester; Mr. J. D. Hadden, Lond.; Mr. W. Heap, Liscard; H. T.; Mr. J. Hughes, Llanllar; Messrs. C. J. Hewlett and Son, Lond.

I.—Dr. W. I'Anson, Whitehaven.

J.—Mr. H. James, Liverpool; J. W. G.; J. J.; J. J. H.; J. H. S.; J. G. B.; Dr. C. H. L. Johnston, St. John, Canada; J. D.

K.—Dr. E. W. D. Kite, Hillsborough; Dr. G. D. Kingsbury, Blackpool; Dr. A. A. Kanthack, Cambridge; Mr. W. Kane, Nagpur, India.

L.—Mr. C. F. Le Sage, Lond.; Mr. G. Ley, Portsmouth; L. A.; Lond.; London Temperance Hospital, Secretary of.

M.—Dr. J. Morton, Mussoorie, India; M. R.; M. A.; Medicus, Winfrith; Mr. S. Mackey, Newcastle-under-Lyme; M. B. G.; Mr. J. R. McKinlay, Lond.; Messrs. J. McGeachy and Co., Glasgow; Mr. W. A. Mushé, Marlow.

N.—Mr. J. S. Nolan, Lond.

O.—Mr. R. J. Orford, Market Bosworth; Owner, Bournemouth; Mr. H. C. H. Oliver, West Malling.

P.—Mr. A. E. Phillips, Lond.; Mr. F. E. Pearse, Ripley; Mr. A. S. Pike, St. Johns, Newfoundland; Paisley Parish Council, Inspector of; F. J. Parsons, Ltd., Folkestone.

R.—Dr. W. Roulston, Wakefield; Messrs. J. Robbins and Co., Lond.; Dr. R., Castle Bytham; R. W. S. B.; Mrs. R. Ross, Edinburgh.

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